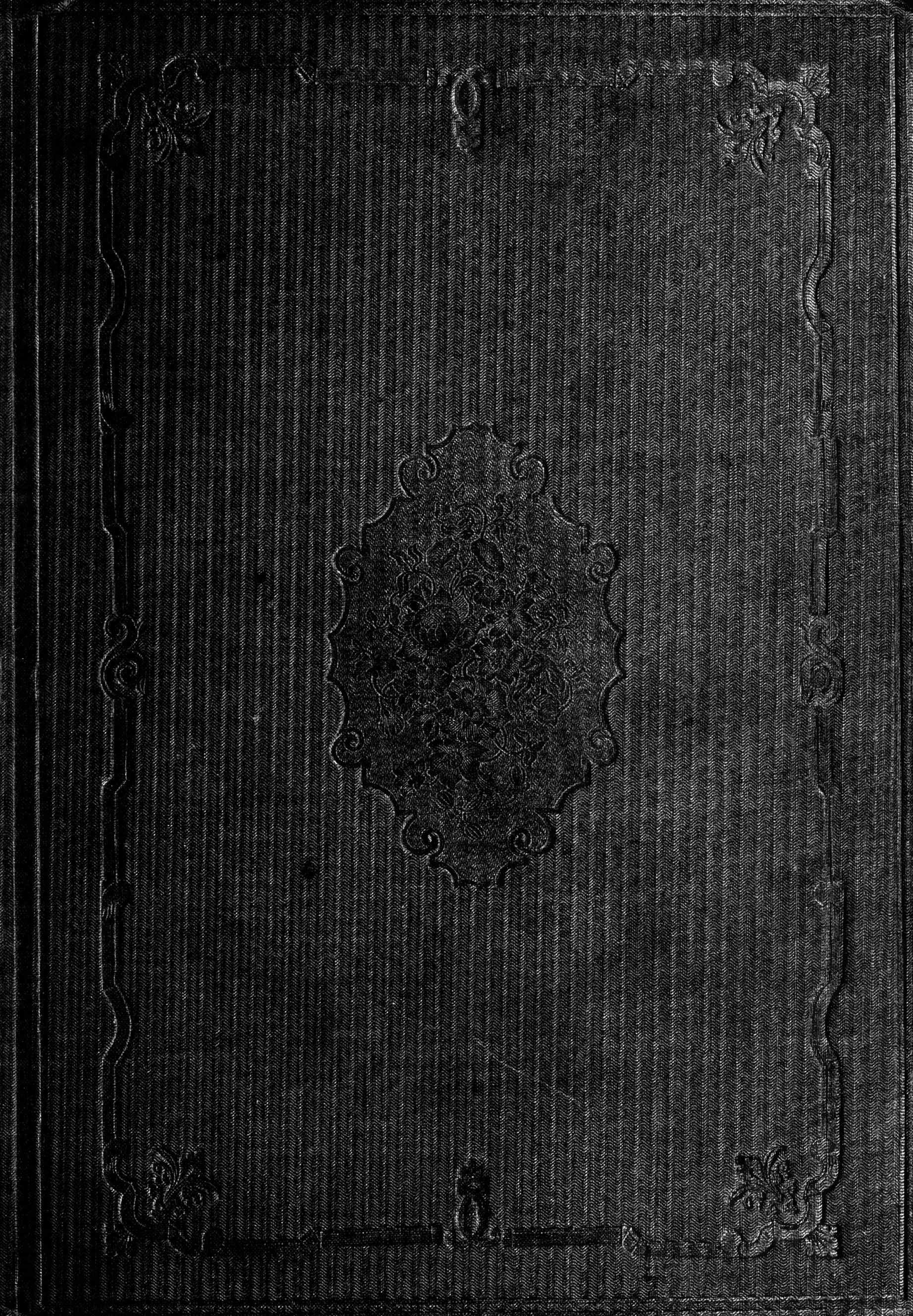


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CHICAGO

THE COTTAGE GARDENER:

A

PRACTICAL GUIDE

IN EVERY DEPARTMENT OF HORTICULTURE

AND

RURAL AND DOMESTIC ECONOMY.

CONDUCTED BY GEORGE W. JOHNSON, ESQ.

EDITOR OF THE "GARDENER'S ALMANACK," ETC.

THE FRUIT AND FORCING-GARDEN, by Mr. R. Errington, Gardener to Sir P. Egerton, Bart., Oulton Park.

THE KITCHEN-GARDEN, by Mr. J. Barnes, Gardener to Lady Rolle, Bicton; and Mr. T. Weaver, Gardener to the Warden of Winchester College.

THE FLOWER-GARDEN, by Mr. D. Beaton, Gardener to Sir W. Middleton, Bart., Shrubland Park.

FLORISTS' FLOWERS, by Mr. T. Appleby, Floricultural Manager to Messrs. Henderson, Edgeware-road.

THE GREENHOUSE AND WINDOW-GARDEN, by Mr. R. Fish, Gardener to Colonel Sowerby, Putteridge Bury, near Luton.

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HOUSEHOLD ECONOMY, by the authoress of "My Flowers."

VEGETABLE AND OTHER COOKERY, by a Lady.

THE AVIARY, by a Naturalist and Bird Fancier.

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TO OUR READERS.

“LADIES and Gentlemen, we are to be together for six months,” said the captain of an outward-bound East Indiaman; “let us be pleased with each other during that time.” Now, no voyage could be more delightful than was the one of which that brief address was the preface: let it be ours, then, at the commencement of a new volume—our six months’ voyage; and we have a good hope, when it closes, that *our* passengers will agree to a memorial, as in the voyage alluded to, thanking “the captain, officers, and crew, for their uniform urbanity and good conduct.” Such a memorial is doubly gratifying, for it rewards past efforts, and is an earnest of future success;—it is an evidence that the same passengers will sail with you again, and that they will recommend the craft to their friends. As we are beginning a new, so we are just closing one of our six months’ voyages; and most gratefully do we add that it has been prosperous. That it has been pleasant to our passengers that prosperity is a silent testimony; but we have recorded evidence, also, in many letters—such as we have before quoted in former volumes—and we must give extracts from two of them now.

One, from a young gardener, says,—“My garden has been a complete mass of flowers, while the gardens around looked comparatively barren. I have had several brother professionals asking my advice, and among them my old master. The advice I gave him was the advice I have given to all—Read *THE COTTAGE GARDENER*. My old master laughed at such advice, saying such principles and secrets as I practised were not taught in books; but I soon convinced him of his mistake, by shewing him the volumes, and comparing my garden with them. I am happy to say that he is now a constant subscriber.”

The next letter is from a lady, and it thus concludes:—“I must add my mite of thanks for your most useful periodical, which, from an indolent country girl, has converted me into an active gardener, delighting in my flowers, and not scorning hard work—at which my husband marvels.” Now, some such young lady as our correspondent was *before* she read *THE COTTAGE GARDENER*, was another young lady on board the ship we have mentioned; and we remember her asking the captain whether he should have a new band of musicians next voyage. He replied in the negative, but that “they would have a good supply of new music.”

Precisely so with our musicians. We retain the old—have added one or two more; and we are quite confident that our readers will agree that they all “discourse most excellent music.” They harmonise well; have abundance of new themes; and we pledge ourselves that they shall keep good time.



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WEEKLY CALENDAR.

M D	W D	APRIL 3—9, 1851.	WEATHER NEAR LONDON IN 1850.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bef. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in In.						
3	Th	Gooseberry flowers.	29.684—29.526	58—26	S.W.	—	34 a. 5	33 a. 6	8 24	2	3 28	93
4	F	Currant flowers.	29.656—29.420	56—42	S.	0.08	32	35	9 34	3	3 10	94
5	S	Dog Mercury flowers.	29.556—29.381	57—25	S.W.	—	29	37	10 44	4	2 53	95
6	Sun	5 Sun. in Lent. Lady-smock flowers.	29.609—29.440	63—38	S.E.	—	27	38	11 52	5	2 35	96
7	M	Cuckoo heard.	29.514—29.440	55—34	S.W.	0.06	25	40	morn.	6	2 18	97
8	Tu	Redstart seen.	29.429—29.346	61—31	S.W.	0.02	23	41	0 56	7	2 1	98
9	W	Tree-Pipit heard.	29.536—29.459	52—42	N.E.	—	20	43	1 55	8	1 44	99

WE have often wished that there was a law commanding every one who ventured to write a book, thenceforth, to record his birth and parentage, at the commencement of a diary, to jot down in it, from time to time, the particular events of his life, and that when dead, his family should send it to London, to be deposited, and indexed, in an office especially devoted to the purpose, and of much more ready reference than his will would be if enrolled at Doctors Commons. We have so wished, and still wish, because at some period or other, a memoir of every member of the literary fraternity is certain of being inquired for, and, of course, the inquiry is the more general, and the interest more strong, just in proportion to the usefulness or rarity of his works. Yet, how fruitless is our research relative to many of those whose brain-births are amongst the most popular of our literature. Who wrote the *Iron Basilike*? Who composed our *National Anthem*? Who wrote *Thomas a Kempis*? Are questions as unanswerable, as who was *Junius*? Now, it so happens, that the writer of these weekly notices has a great thirst for the biographies of those who have written upon gardening; and he once had two companions who enjoyed the like unquenchable propensity—he alludes to the late Mr. Felton, and Mr. W. Forsyth. The latter had one of the most extensive private libraries of horticultural literature, perhaps ever collected, and he was most liberal in allowing it to be consulted. He had spared no labour in collecting biographies of the authors of the books on his library shelves. Those biographical collections he left in MS., and we shall be obliged by any one informing us of their fate. Poor Mr. Felton is also dead—and what have become of his large accumulations, illustrative of Shakspeare, and the *Portraits of Gardeners*? These are sad remembrances, and painful inquiries, for they remind us of happy meetings that can recur no more; and it was at one of these that Mr. Felton sought from us such little information as we could give, relative to one whom he spoke of as “the best practical writer on Scotch gardening”—WALTER NICOL. He was especially anxious to ascertain if a portrait of him existed, of which there is little probability, since all that can be gleaned concerning him are in this brief notice. Even the place and time of his birth are unrecorded, nor is the christian name of his father known to us. The latter was the gardener who planned and executed the grounds of Raith, the seat of Mr. Ferguson, near Kirkaldy, in Fifeshire, and the kitchen-garden of Wemyss Castle, in the same county, the residence of General Wemyss. It is probable that old Mr. Nicol, in the decline of life, became a florist and nurseryman, for in speaking of carnations, Walter Nicol says—“My father cultivated them most eagerly to a very great extent, and with as much success as most people. About the year 1785, he had a most admirable collection, and excelled all his neighbours in the real *Clove Gilliflower*. A year or two afterwards he unfortunately changed the situation of his valuable collection, from the borders in front of an extensive range of hothouses, to several large mounds of soil brought from a field, to be used in composts for melons, peaches, grapes, &c. He had taken some of it for his potted carnations, and found they did remarkably well in it, and so was induced to shift the whole stock. He had not discovered that this soil swarmed with wire-worms, and from their ravages, in two years, he lost three-fourths of his stock. He shifted the remainder back to their original situation, but, unfortunately, some of the field soil had been trenched into the borders, and so, ultimately, was lost his entire collection.” We hope this catastrophe will be a warning to our readers, as it was throughout his gardening career to Walter Nicol. He began that career under the tuition of his father, at Raith, but he migrated to England for improvement, and eventually became head gardener to the Marquis of Townsend, at Rain-

ham Hall, in Suffolk, the gardens of which, however, were said to be no evidences of his skill. Returning to Scotland, he succeeded his father as head gardener at Wemyss Castle, where he remained until about 1797, when he settled at Edinburgh, as a garden designer, employing his leisure as a writer on Scotch gardening. In 1798, appeared two editions of his *Scotch Forcing and Kitchen Gardener*, and in the year following, *The Practical Planter*. In 1809, he published *The Villa Garden Directory*, and its fourth edition, dated 1823, is now before us. His *Gardener's Kalendar* appeared in 1810, and his *Planter's Kalendar* in 1812, but this was completed after his death, and published by Mr. Sang. This last work was intended to contain, and does contain, his observations made during an extensive tour, undertaken in 1810, to visit the principal seats and plantations in the United Kingdom. He had scarcely commenced the arrangement of his materials, when he was hastily arrested by death, in the March of 1811. His works are of first authority, and rank on a level, both as compositions, and for sound practical knowledge, with the works of Abercrombie. The only garden plan we know as being his, is the principal approach from the north to Dalhousie Castle, near Dalkeith.

We have several passages marked to shew the practical character of his works, but must restrict ourselves to the following:—“A striking proof of the superiority of the larch, in *water-works*, occurred on the estate of Athol. A weir, or river dam, which, while constructed of oak, required to be renewed or repaired every four or five years, was formed with larch, and in 1792 had stood nine or ten years, the timber then remaining in a sound firm state. On the 6th of May, 1728, I visited this dam: it exhibited no signs of decay at that time.” “I have known an instance where a field was *taken in* for a nursery from an old pasture of a rough sward, and in which myriads of the grub-worm, slug, &c., had found an asylum. It was conceived, that by sub-trenching or deeply digging it the land might be effectually cleaned; and, accordingly, the field was planted with nursery, without any preparatory crop of grain, &c., being taken. But the result was, that most of the firs, the larches, the elms, the beeches, &c., became a prey to the vermin the ensuing season; and their stems were found peeled entirely round, about an inch under the surface.” “Perhaps some may think I say too much when I assert, generally, that trees three, or at most four, years from the seed, and which are from twelve to twenty-four inches high, will, in any situation or soil, outgrow those of *any* size under eight or ten feet within the seventh year. Observe, I say generally; for by planting a poplar or lime of eight feet, in deep mould and a sheltered situation, they will most likely outgrow an oak or elm of twelve inches *within* that time. But change situation and circumstances—place them on thin soil, and in an exposed situation, then mark the result: the young plants flourish, the others languish. This may be deemed an unfair comparison, the trees being different in their natures. But let the trial be made in *any* situation, with plants of the same species or kind: take two oaks, two beeches, two larches, &c., one of each being, suppose, eighteen inches, and the other any size from two to ten feet in height; and I do assert that, by an impartial treatment, the young will outgrow the old plants within the seventh year. Nor will the latter ever overtake them in growth, become such handsome trees, or valuable timber.”

METEOROLOGY OF THE WEEK.—At Chiswick, the average highest and lowest temperatures of these days, from observations during the last twenty-four years, are 56.1°, and 36.2°, respectively. The greatest heat, 78°, occurred on the 3d, in 1848. Rain fell during 66 days of the period, and 102 were fine.

In the Fruit-Garden department to-day, Mr. Errington has considered the modes of preserving the blossoms of our wall fruit, but there is one mode—that of *retarding* the blossom, which we wish he had entered upon more fully, for we believe it is by far the most desirable security for us to aim at. It is the blooming in March and early in April, the most fickle season of our fickle climate, that renders our crops of wall-fruit precarious. It is their blossoms being tempted out by sunny days, and then killed by frosty nights, that we should aim to avoid, for there is no doubt, if it can be effected, that it is wiser and safer to prevent their being induced to blossom, than to have to protect that blossom after it has expanded. Such a course of procedure is only another example of the old adage, “To prevent is better than to have to cure.”

Now, we believe that this might be very easily and very effectively accomplished; and we beg to draw attention to the following experiment with two Belle-garde peaches, of the same age and size, growing in the same garden, and against the same wall. One, last November, was shaded by a moveable, close paling of boards, so high and so long as to shade the entire tree all the day, though placed at a distance of four feet in width, measuring from the wall. Every sunny or mild day, from November until the end of March, was this screen placed before the peach tree; and when the ground was frozen, a covering of straw was placed over the border about the roots to keep in the cold. At night, and during cold days, the screen was removed. We calculated that by keeping both the roots and branches inactive by this cold, shading, system, we

should delay the blossoming, nor were we wrong in this anticipation. The Bellegarde peach not so kept cold was in full blossom in the third week of March, whilst that kept cold will not be in blossom for a fortnight from the time we are writing this (March 25th).

Now, if there had been any snow this winter, so that we could have had it heaped deeply, and beaten down hard over the roots and covered over with straw, it would not have melted by this time, and by such treatment, and keeping the screen before the tree, during the first half of April, we know of no reason why the tree should not be restrained from blooming until the end of that month. Nor do we see why the peach, like the vine, may not acquire a habit of late blooming. Our experiment was a very rough one, and made under circumstances of disadvantage; but we record the fact, that others who have greater facilities than ourselves, may test the success of such treatment more extensively.

GARDENING GOSSIP.

THE *Society for the Encouragement of Floriculture* had a numerous meeting at Kingsland last week. The most remarkable productions were *Seedling Crocuses*, from Mr. Lockhart, of Fulham.

Three were blues, of rather different qualities. One of them, named *Incomparable purple*, was of enormous size, and formed almost like a Tulip; another, *Admiral of the Blue*, was, if possible, finer, though smaller; *Lady Grey* was white outside, and a sort of grey lilac within; and a pure white, almost as large as the purple, was greatly admired. It was named *Princess Helena*. The others were very superior to our best ordinary varieties. *David Rizzio* and *Prince Albert*, two favourite purples, were completely distanced. Mr. Lockhart declined submitting them for certificates, as his stock was too small to profit by any sale of them at present.

The *National Floricultural Society* progresses, many leading florists having given in their adherence.

An advertisement in our last number shows they are upon the move. The meetings for the year are all fixed, and it is decided that their shows shall take place at the Horticultural Society's rooms.

The *Nurseries round London* are beginning to look gay, and especially Henderson's, Low's, Rollison's, and Groom's. Hyacinths of all colours, and forced flowers, of course, do a good deal towards helping the display; but there are at Messrs. Henderson's and at Rollison's fine specimens of stove and orchidaceous plants, of which we shall give a more detailed account.

The Tooting Nursery is rich, too, in the splendid *Rhododendron Javanicum*, of which the Messrs. Rollison possess hundreds of seedlings. Mr. Groom's *monster Tulip bed* looks promising; perhaps never more so. Messrs. Low and Son are more famous for specimens. Whatever plant is coveted by a visitor is sold. But the vegetation of the world seems concentrated in the Clapham Nursery; plants of all kinds, from seedlings just above ground to strong mature nursery stuff, literally cram every receptacle on the premises; we are afraid of mentioning numbers. Choice subjects actually remind us, in quantity, of lettuce and cauliflower plants at a market garden.

A great sale of *Carnations* and *Picotees* in London brought a good many more to market than were wanted, and they were comparatively sacrificed. The auction mart has been such an inexhaustible source of second

rate things, and things with wrong names, that we do not wonder at good things being sacrificed.

We doubt very much if the owner gets twenty pounds clear of expenses for his very superb collection. Mr. Barnard's collection, though not worth half the money considering the season of sale, produced twice as much. The sale, however, on this occasion was not half advertised; perhaps the thousands of readers of the *THE COTTAGE GARDENER* hear of it now for the first time.

The *Victoria Regia* is destined to figure in many places. Mr. Knight, of the King's Road, has a plant well accommodated. Mr. Weeks, a near neighbour, is erecting a lily palace on purpose for one; and Messrs. Veitch, of Exeter, have had a plant in bloom above a month, which has had a dozen flowers.

This noble plant is, however, so thoroughly aristocratic, that it must have a residence constructed on purpose to do any good in its culture. Messrs. Veitch keep up a circulation of the water in the tank by means of a revolving wheel.

The second part of Dr. Hooker's work on *The Rhododendrons of the Sikkim Himalaya* has appeared, and contains ten splendid figures.

R. Aucklandii, a very large white; *R. Thomsonii*, with deep red flowers, rather loose; *R. pendulum*, an epiphyte, with small hanging white flowers; *R. pumilum*, an alpine species, with small pink flowers; *R. Hodgsonii*, a large leaved species, with rose-coloured flowers, of great size, having eighteen stamens; *R. Lanatum*, pale sulphur colour; *R. glaucum*, small species, with pale rosy flowers; *R. Maddeni*, with long white flowers, with eighteen or twenty stamens; *R. triflorum*, a yellow species; and *R. setosum*, distinguished for powerful fragrance. A third part is expected.

A correspondent writes thus:—

I read yesterday your account of the Spanish bulb, and only regretted that I did not know about it two years ago when I was in Spain at Algesiras, Malaga, &c.; but I shall write to a friend of mine at Gibraltar to hunt for it forthwith; though, unfortunately, I read in the papers that he was shot by robbers in the ash woods, near Gibraltar, where I shot with him two years ago; but by the time he gets my letter I hope he will be well.

I grew *Saponaria Calabrica* at your suggestion. It was beautiful. I shall have plenty sown for transplanting; or do you sow it broad-cast? Have you any dwarf walls? The prettiest things I saw at Lisbon, Cintra, &c., were *dwarf-terraced walls*, double of 4-inch brick, with the middle filled with earth, planted with *Guernsey* or *Belladonna Lilies*, *Anemones*, *Ranunculuses*, *Geraniums*, &c.

I see you ask about *nosegays*. I grow all my flowers for bouquets; and the best flower I have had this winter has been the *Tropæolum Lobbianum*. My gardener sows in November. From three plants trailing in a vinery, we have picked 150 bunches, and now he could have 50 more, and is cutting them away. These, with the light blue-grey *Italian violets*, make a capital nosegay. And recollect, as you write about colour, that the complementary colour to deep orange is the *lowest* blue; but as most writers have it the *deepest*, and Newton, the painter, (not Sir Isaac) felt this, and always painted orange dresses and chinchilla fur. Landseer, wonderful painter as he is, borrows this from Newton, but does not know the reason. I find *Goodyeria discolor* a capital flower for nosegays, blowing in winter, and it lasts in water a month.

E. Y.

NEW PLANTS.

THEIR PORTRAITS AND BIOGRAPHIES.

TRANSPARENT DENDROBIUM (*Dendrobium transparentens*).—This is another gem in the crown of Dendrobium—the royal family of air plants, of which nearly a hundred and fifty species have been recorded by systematic writers, among which are many individuals eminently beautiful, and not surpassed in that respect by

members of any family in the extensive order of orchids, though it embraces about three thousand species, Den-



drobium was named by *Olof Swartz*, a celebrated Swedish naturalist, and accounted the best Linnæan botanist of his day. He began his studies at Upsal, in 1771, the year that Linnæus died. Having acquired a taste for botany, he made several excursions in the north of Europe, and published his researches. He spent five years on the western coast of America and in the West Indian Islands, whence he returned to England in 1778, loaded with botanical acquisitions, and spent a whole year in this country examining the herbaria of Sir Joseph Banks and other botanists. On his return to his native country, he was appointed a Professor of Natural History at Stockholm. In his many works, he added upwards of fifty new genera and eight hundred and fifty new species to the list of flowering plants, besides a great number to the class of the flowerless. He also contributed largely to works devoted to zoology. He died in 1818, and Willdenow dedicated the genus *Swartzia* to his honour.

Dendrobium, like nine-tenths of the names of genera in Natural History, is a Greek compound from *dendron*, a tree, and *bios*, life; alluding to the way the species live by clinging to the stems and branches of trees, and rooting among dead vegetable matter, or scanty soil, that occupies their surface, and from which, with the humid atmosphere, they exclusively derive their food. In this respect air plants are distinguished from parasitical plants, which, like our own *Mistletoe* and the various species of *Dodder*, fasten their abortive roots into the wood, and live upon the sap of the individual to which they attach themselves. Hence it is that air plants are called epiphytes, and such as the *Mistletoe* are termed parasites. The second name of this *Dendrobium*, *transparens*, is deserved, because the flowers are "as transparent as anything vegetable can be."

All orchids, whatever, are included in 20-Gynandria 1-Monogynia, of the Linnæan system. Gynandria signifies

that the stamens and style, with the ovary, are all blended together into one solid mass, called the column. In this column three stamens are consolidated, but one of them only is fertile, having pollen. The early writers on orchids were in utter darkness in respect to the individual parts which compose the flower, and the organs and economy of fructification; but as the laws of organisation have been propounded and studied, old errors have been corrected by different writers, and it is worthy of remark that our gardeners at first stood in the same position with respect to the proper modes of cultivation, and also that the true ways of cultivation afterwards kept pace with the progress of the discoveries of the organisation, or general structure of these plants. The methods by which we now see them brought to a condition of far greater splendour than they attain in a state of nature, have been amply explained by Mr. Appleby in these pages, and are all that seem necessary for the guidance of the gardener and amateur. The student of botany, who may desire to be made familiar with their structure, may be referred to a recent work, entitled *Illustrations of the Genera and Species of Orchidaceous Plants*, by Bauer and Lindley.

The genus *Dendrobium* comprehends nearly 150 species, which have been described, and, even after making a due allowance for duplicates, which would be impossible altogether to avoid, they must still be very numerous; and amongst them are many of the finest plants in this curious Natural Order. They have been classed in ten sections by Dr. Lindley in *Paxton's Flower Garden*, i., 134. *Dendrobes* are nearly all Asiatic, inhabiting trees and rocks in all the damp hot tropical countries, and some are found a little beyond the tropics in Japan and New Holland. *D. nobile* withstands the periodical cold of Canton, in China, where it freezes occasionally. *D. calcaratum* and *moniliforme* grow along with *Rhododendrons*, *Magnolias*, and *Oaks* in Japan, as far north as the parallel of Lisbon, and are annually subject to a very low temperature. *D. alpestre* grows on the Himalaya range, where the snow sometimes lies in winter for a week or more. To the southward, as far as Port Jackson, where the mean temperature does not exceed 60°, Allan Cunningham found *D. amulum* growing in an extremely dry atmosphere on the rugged trunks of the Ironbark, *Eucalyptus resinifera*, where it flourishes most luxuriantly, and flowers in summer when the dry north-west winds often prevail. *D. undulatum*, a handsome species, originally discovered by Sir Joseph Banks at Bustard Bay, has lately been found on barren hills, naturally clear of timber, upon the banks of the Brisbane River at Moreton Bay, where the plant forms tufts on bare rocks exposed to the full heat of the sun, which, during nine months of the year, is very considerable on that part of the coast. *D. speciosum*, a magnificent old plant from New South Wales, has only recently been domesticated, and brought to yield its long spikes of flowers to the industry of our gardeners. Such are the data of the outlying *Dendrobes* from the great body of the family. If our space allowed we might enumerate peculiarities in the different sections which have more local habitation.

D. transparens is found in Nepaul, and from the Garro Hills, at an elevation of 5,300 feet it was recently obtained by Messrs. Veitch and Co. through their collector, Mr. Lobb. It has erect, smooth, tapering stems; its leaves are willow-shaped, and rather twisted at the point. Flowers two or three together; sepals and petals pale lilac, somewhat like the leaves in shape, but blunter; lip pointed, downy, sides rolled inwards, pale lilac, with a dark lilac spot in the centre.

B. J.

THE FRUIT-GARDEN.

PROTECTION TO BLOSSOMS.—"Better late than never," is an old maxim, and must be our apology for venturing, at the beginning of April, to recommend the above-named practice. Like root-pruning, and some other additions to modern practice, the *pros* and *cons*, as to its utility, are most numerous; but if a mere majority must settle it, we think the balance will be found in favour of the practice. It really does seem strange, that (to take an isolated case) any man should doubt the propriety, or shall we say harmlessness of a gardener, with a keen north-

easter, and a falling thermometer (already, it may be, indicating some 6° or 8° of frost), venturing to hang a mat over his fine Moorpark apricot in full bloom, at five o'clock in the evening, in the middle of March, merely to avert the rigours of the night. But so it is; and many persons who would not hesitate to clothe a Moutan Pœoney, or a choice Tea-scented Rose, yet stand horrified at the idea of taking the most simple means imaginable for dulling the edge of such a clumsy customer as a sharp spring frost, out of season and unexpected. It is not trouble, it is not expense, for a few spruce boughs will suffice. We, moreover, know many excellent practical men who repudiate the practice, and who would take double the trouble if they could once fairly satisfy themselves as to the soundness of the practice. Now these are serious differences in the eye of the amateur, and no wonder. The pathway of science—improvement—call it what you will, has, however, always been beset with such, and will be, until the real position of the question is not only seen but felt.

Now there is a collateral point of great import connected with this question. A point which has been but too often lost sight of “amidst the clash of arms.” We mean the *ripening of the wood*. It may seem tiresome to many of the readers of this work, to hear perpetually this cuckoo cry. Could, however, the majority be brought to a thorough appreciation of this one point, the cry would cease; there would be no further occasion for it. So great, we are assured, is its importance, that we can readily fancy Mr. A., a sound convert to this doctrine, sleeping soundly with a thermometer indicating some 8° or 10° of frost, and neither spruce boughs, canvass, nor bunting in his garden; whilst Mr. B., a deep and rich borderman, with his trees invested in their night-caps, shall after all his pains have an inferior crop to Mr. A. What is the consequence? Mr. B. thinks he has been misled about this covering affair, and resolves to leave all to chance.

As long, nevertheless, as this question is narrowed into what is termed *protection* to the blossom, it is shorn of half its importance. There is another bearing to it, and probably the most significant one, we mean RETARDATION, or, in ordinary terms, delaying the blossoms. Divest the practice of this and the wood-ripening, and the whole becomes, indeed, not worth consideration.

With regard to retarding, who will deny the untoward fate which sometimes befalls some precocious pet in the plant way, which happens to be placed in some highly favoured corner, of immense benefit, to be sure, at other periods, as furnishing the requisite heat, but as far as concerns a late and unexpected spring frost, a complete trap!

It will be also remembered by most of our readers who are at all critical in such matters, that the majority of our hot-wall men, whether in print or in practice, fight shy of the idea of using their artificial heat too liberally at an *early* period. They fear being entrapped. How different the case, however, in September and October; here their caution diminishes, and they begin to talk of ripening the wood, and fires are laid on with little hesitation. Surely a due consideration of *all* these points in concert, must throw an amount of light on this hitherto ravelled affair, which no counter arguments can possibly obscure. Opinion is nothing here; *facts*, strung properly together, are everything. So strongly imbued are we with the weight of such arguments, irrespective of mere practice, that we have this winter covered at least double the extent of subjects; comprising apricots, peaches, nectarines, pears, plums, cherries, gooseberries, currants, &c. No doubt some of our readers will consider the process expensive. It is by no means so with boughs, although, of course, a little labour is requisite. Where, however, materials do not come to hand readily, it may be so. We have abundance of

spruce boughs close to our elbow, and, in addition, a little canvass for some of the more dainty kinds. We do not know that any material is more proper for covering than thin canvass, such as is manufactured by Mr. Nathaniel Hulme, of Paradise-green, Knutsford, with whom we have dealt for many years, and which he sells at about fivepence per square yard. He generally makes it in widths of three yards, which is enough for most walls, so that every lineal yard costs fifteenpence; but then this canvass will last well for seven years, if properly preserved and a due care be exercised. Thus it will be seen, that the annual expense of protecting a lineal yard of walling is not more than twopence-halfpenny, exclusive of a few ordinary poles. We place a pole every six feet, running under the coping at top, and straddling away nearly two feet at bottom. At two feet above the ground level, an auger hole is bored in the pole, and an oaken peg driven in, the end left projecting nine inches forward, and when the canvass is lowered in the day, it hangs in folds on this line of pegs, this keeps it from contact with the damp soil.

Every pole has a ring dangling from a staple close to the top; and on the outer face a rope of sash-cording is attached to the edge of the canvass opposite each ring; this being passed *through* the ring from the under side, enables the operator to pull it up, or let it down, with ease. Thus, when the canvass is lowered, the wall is uncovered, and *vice versa*. Now these rings and cords will add to the expense; and since both are very durable, we may, perhaps, add another halfpenny per lineal yard to the amount, accounting the ropes to last nearly as long as the canvass.

A still more complete plan is to hang the canvass like curtains, or after the manner of the covering to what are termed conservative walls; and, doubtless, this ought neither to be thought too much trouble or too expensive. We cannot help thinking it a niggardly economy in any person to lay out some scores of pounds in building garden walls, and then to leave them at the mercy of all weathers for the lack of a few pounds more. Few, however, would do so, if they could be assured that the principle is good; and we shall certainly do all we can to place the question on a proper basis, and to lead our readers carefully to distinguish between the *use* and the *abuse* of this practice; as also to place the culture of hardy fruits on so sure a basis that walls may be worth covering.

What is termed bunting is much used in the neighbourhood of London, and is for the most part nailed down on the walls, and, therefore, not capable of daily removal. Having had no experience in the use of this article, we cannot speak decisively about it; but we suspect that this or *any* other *fixed* covering, which produces a faint and uniform shade, will never succeed so well as a *moveable* covering, or that which produces flickering rays, with now and then “fields” of light, as the spruce does when properly placed.

Now it appears that next to a fair settlement of the question of covering or no covering, arises that of *fixed* or *moveable* coverings. Of course, the one must, on general principles, be better than the other; exceptions there may be, but it is the principle or rule we have to deal with. The question, therefore, whether fixed covering, or, in other words, *shading*, is right, has yet to be decided by the gardening public. For our parts, we have long since formed an opinion, based on practice, that flickering or shifting gleams of sunshine are of the utmost importance; and that a *fixed* covering, producing the sort of pale glare, which a farthing rushlight will furnish, is not the thing for developing the resources of the awakening blossom bud, which, being in an inchoate condition, requires actual sunlight, at least at intervals, without an intervening medium.

One of the principal charges, and one of a grave cha-

racter, which has been made against the covering principle, is the fact, that fixed or matted coverings "draw" the blossom bud; that is to say, attenuate it, and by consequence produce vegetable debility. Now, it must be at once admitted, that if any person taking a dry and abstracted view of the question, fastens down his protecting material, and leaves all the rest to the chapter of accidents, minus the necessary attention, those "protectionists," who recommend moveable coverings, ought by no means to be held responsible for the consequences.

Before concluding this piece of advice concerning the protection of blossom, it behoves us to offer a necessary caution. We have before spoken of the *retarding* principle as an essential and indivisible portion of the great question of blossom protection. Let it be observed, however, that to retard in the end of January, and in the end of March, are two very different affairs. And why? Simply because the advancing spring brings a much advanced average temperature; and it is scarcely necessary to remind our readers that the inducements to "draw" are much greater at high temperatures than low ones. And here we fall within the regions of science—here the great matters of heat and light, not abstractedly, but in their combined action, call for a consideration. The thorough elucidation of this, in a purely scientific point of view, must be left to enlarged views and fairer opportunities; we may merely add, that such is *the case in practice*; and that he who covers heavily as late as March, *simply on the protective plan*, will possibly find his labour wasted, and it may be, end his days in an unconverted state, carping at those crotchety fellows who persist in not only protecting, but *retarding* blossoms.

In concluding this paper, let us importune our jury—a discerning public—to divest themselves of prejudice, and to begin by judging it as a mere common-sense matter. Let them take a lesson from every early gooseberry bush in yonder warm corner, where no blast can reach, and where every glimpse of sunshine is enjoyed. Or, if analogy is permissible, let them observe the fate of the poor honey-bee, put to bed hungry in October, and tempted by the cravings of an empty stomach, by the first gleam of spring, to wander through devious tracks in search of the pale primrose, the crocus, or the tussilago.

R. ERRINGTON.

THE FLOWER-GARDEN.

THE ROUTINE OF THE SEASON.—For the great bulk of cottage gardens, the beginning of April is not only the best time, but also the most convenient season to put the flower-garden in order, and get the borders and beds ready for sowing seeds. The *grass*, if there be any, should be swept, rolled, and mown; the *gravel walks* first scraped, to gather off all blacks, or other discoloured parts, then stirred with a hoe to loosen the surface a little, so that the rake may put it all level, and gather off large stones, that when it is rolled the whole will have a smooth hard surface. Then, and not till then, is the right time to give the walks a fresh appearance, if that is desirable, and one can afford to give them a very slight coat of fresh and finely-screened gravel. It is a great waste to lay on a thick coat of gravel, for unless the new gravel is of a good binding quality the walk is not so firm after a thick coat of it is put on as when the surface is merely covered. Our walks here are as good as walks can be; we have no stint of good gravel, and this is exactly the process we adopt with them every spring. When they are thus regulated they look all over the garden as if they were quite new, and yet they are as firm and as hard as if they had not been touched for years past. Nothing sets off a garden so well in the spring as really good and fresh looking walks, whether the garden be large or small. Where the proprietor of the garden is employed all day long at his calling, and has to do all the garden-

work early and late, the more economical way is to finish all the digging and wheeling first, and let the walks come in for the last part of the spring dressing.

Flowers in general are great impoverishers of the soil, therefore it is a safe plan to add some compost to the borders and beds every season. One-half of this compost should be very rotten dung, and the other half from the rubbish-heap which every garden furnishes during the twelvemonths; but fresh earth from banks, or commons, is still better than the best compost one can make. There is not a single bed or border in the flower-garden here but we dress after this manner every spring, and all the beds are emptied in three years. They are three spits, or spadeful, deep, and one spadeful is removed every year, and the same quantity of fresh earth and compost is added, and always on the top. Our top layer being thus fresh every season enables the young plants to grow away, at first, with all the vigour that good gardening is capable of giving them. When they are once established in good health, and their roots strike deeper in the beds, they meet with poorer soil, and the deeper they go the poorer it becomes, so that on our dry soil the plants are never too leafy, and they flower profusely to the last. Now the old plan, and the one more generally followed, is this: a coat of decayed dung, or of some compost, is laid on the beds as often as it is found necessary, and this is dug a spit deep; or perhaps the bed is trenched, working the manure regularly throughout, but always leaving a surface of the old soil to set the plants or sow the seeds in; the seedlings or young plants do not grow, at first, so strong or so fast in their bed of old soil as they would do if in a fresh compost—time is lost—but by-and-by, as the roots get down to the manure, the plants grow too fast, produce many more and larger leaves than are essential to a good bloom; and, if the situation is low and damp, by the middle of August we have more leaves than flowers, and when the garden ought to be in the height of its beauty every thing looks weedy. This old-fashioned way we must abandon before we can hope to do much good. All the new stuff, whatever it may be, or however slight the dressing, we must leave on the very surface. In other words, we must take a leaf from the farmer's book. His most precarious crop is the *turnip*, and he does not bury the *muck* for them, so that the roots cannot reach it for many weeks. No; he opens his drills, puts in the muck, closes them up as soon as he can, and runs the seed-machine depositing the seeds right over the muck, and very nearly in contact with it, so that as soon as it sprouts the roots are in the very midst of it, enabling his plants to grow away rapidly, so that neither fly or beetle can make head against them.

That is the way they do it on the farm, and that is the way we must also do it, if we want to keep our head above water, and the way to do it is this: say that our bed requires three inches of compost, then, first of all, remove three inches of the old soil from the top and wheel it on some border—the Dahlias, or Hollyhocks, or Phloxes, and, indeed, all the herbaceous plants may thus be annually refreshed. Favourite shrubs, or new trees, will come in for a share, and, if there is any to spare, make a heap of it for another time, or let it go to swell the compost-heap for next year. At any rate out with it from the best flower-bed; then fork the rest of the bed as deep as your prongs will reach, and spread the three inches of good stuff on the top, and pass on to the next and the next bed till you are all round; when you come to a bed that produced more leaves and less flowers than you liked last year, do not fork that so deeply, remove more of the old soil, and put in cinder-ashes, lime-rubbish, or sand, or something very poor and porous instead, but let a little, if ever so small a quantity, of fresh stuff be put on the top, to encourage the young things at the first going off. Then enter this

memorandum in the garden-book—"1851. *Flower-beds*, top spit removed." Then in 1852 you will know what you are about. When you begin the flower beds you will reserve the top spit, and wheel away the second spit, and this time you need not dig the beds at all, but cast down the top spit as the second is cleared off, and the fresh layer comes on the top as before. Make a memorandum of this, and the third season the third or bottom part of the bed comes in for its turn to be removed; so that, as I have said before, your bed, or at least the greatest part of it, is renewed every three years; and thus one may go on for a life time with all the chances of success in a flower-garden, and with no more trouble or expense than at present with fits and starts.

Our *compost-heap* for this annual dressing amounts to about two hundred and fifty, or say three hundred one-horse cart-loads, made up as follows: one hundred loads of any rough earth, from banks, ditches, or waste places where alterations or improvements are going on about the farm or other parts about the park, or on the estate, near enough; this is got in the winter. In the summer we burn a large quantity of clay for different purposes, and of this fifty loads go to the flower-garden heap; all the prunings of the shrubberies and the refuse old stalks from the garden we char, as Mr. Barnes advises; this gives us so many loads; we then gather large quantities of leaves, for we never bury one in the shrubberies, but dress them with the soil from the flower-beds; all the short grass and sweepings from the garden, and all the leaves, and stalks, and old plants from the beds in the autumn, go to the rubbish-heap; and last of all, just at the tail of the corn harvest, we get twenty loads of half-rotten dung, and the whole is turned over. The different materials are well mixed together, and the heap is turned twice afterwards during the winter; the burnt clay is added by degrees, from July to September. When the heap, or any part of it, begins to smoke from the fermentation of fresh refuse, a layer of the burnt clay is thrown over it, which sucks up all the goodness as it rises; or, more to the purpose, to fix the ammoniacal gas. Professor Way has found that raw clay keeps the goodness of liquid-manure, as it passes downwards, better than burnt clay, but there is no better fixer of the gaseous products than dry thirsty burnt clay. At any rate, there is no better thing for giving to fine flowers on a light soil over a dry bottom, and working it as we do, one could hardly perceive, at the last turning of the heap, that there was any clay in it; and I am quite sure that without some such systematic course for keeping up the condition of a large garden, or a small one either, we should soon get into a *muddle*.

ANNUALS.—All the hardy annuals, and many that are in the lists of half-hardy, may now be sown in the open ground. Californian annuals, such as the *Nemophyllas*, *Collinsias*, &c., that are sown the first week in April, will be in bloom in June; and those sown at the end of the month will not come into flower till the beginning of July. Almost all the annuals will transplant when they are a few inches high, so that they may be sown on a warm border, and put out when spring flowers are over by the beginning of May. *China Asters* and all the *Marigolds*, and *Tagetes*, will do to be sown in the open border, if the soil and situation are warm and dry. I never saw the marigolds come up from self-sown seeds in the autumn, but the *China Asters* always do so here, and more especially if they be in peat or American beds, and yet they call them half-hardy.

BIENNIALS.—Several of the best of them will flower this autumn, if they are sown now. No one should be without a few *Sweet Scabious* in the autumn; the best selections of them and of the annuals are in our former lists.

PERENNIALS.—Any of these which come into bloom

on this side Midsummer, should not be disturbed after the first week or ten days in April. The middle and to the end of the month is a good time to transplant autumnal-flowering perennials, particularly the *Asters*, or *Michaelmas Daisies*, and it is a thousand pities that they are so little cultivated. There were nearly thirty kinds of them in a garden where I was many years ago, but now I hardly know more than half a dozen sorts. Any one, therefore, who may happen to know a good selection of the more dwarf kinds, would be doing real service in sending the names, heights, and colours to our pages.

CUTTINGS.—April is not a good time for out-door cuttings in general, because everything is on the move now, and when a cutting makes new leaves as soon as it is planted it is almost sure to die for want of roots. Still, many of the *bedding Roses* that are pruned at this season would come from cuttings; and the more surely if put in behind a hedge or wall. This is the right time to put in stout cuttings of the *Gloire de Rosamene* rose, to bed out this time next year.

LAYERS of *Rhododendrons*, *Azaleas*, hardy *Heaths*, *Daphne Cneorum*, *Laurustinus*, *Laurels*, and almost all the evergreens will do well, if the wood of last year is buried and fixed well in the ground any time this month, and this is the easiest way of increasing a good stock of them. Those that I have named require no tonguing, but merely to be laid as they are. All the variegated and the yellow-berried *Holly* will root by layers, but require two years to make good rooted plants; and if you twist the part where the last year's growth began, it is better than tonguing them like carnations, at least it is the safest way, as the wood is brittle and may snap like glass if tongued.

GRAFTING.—If the weather is fine and dry this is a pleasant way of propagation, and there is no end to the things that may be grafted. All the beautiful early *Almonds*, large and small, will graft on the wild plum. The *Caraganas*, a set of beautiful shrubs, graft on *C. arborescens*. The *Cytisus*, and they are many, will all graft on the Laburnum. *Cotoneasters* will graft on young Mays or thorns, or on little apple stocks. I have seen a young ash sapling eighteen feet high, and as straight as a fishing rod, taken up out of a grove, grafted with the *Weeping ash* in a back shed, and then planted, and it answered perfectly. The *Weeping laburnum* is still a scarce plant, but it will graft on straight stems of the common one easy enough. The *Weeping Sophora japonica* is one of the handsomest plants we have; it will only do well on the upright *Sophora*.

The best way to learn to graft is this:—go to a laurel-bush, and begin with branches about the size of the little finger, and as high as your breast, so that you can stand up while you are trying the experiment, being the easiest way for the back. Make an up cut two inches long; tie the piece thus cut off to the same branch, and see that it fits by keeping the cut parts exactly to each other: thus you learn fitting and tying; after that take a different shoot, and see if you can cut that also, so as to fit the stock first cut. Whatever we graft on is called a stock. Now any plant that will graft at all will do so exactly like this laurel, as well as by any of the plans ever tried, when the stock and the graft are about the same size, and almost equally so though the stock be twice or three times the size of the graft. But in this case we can only fit one side of the graft to one side of the stock, and the covering of clay must be put on more carefully, to keep the air from drying the part of the stock not covered by the graft. Tongue and crown grafting, side grafting, and other modes have been explained already. D. BEATON.

THE COTTAGE GARDENER:

A

PRACTICAL GUIDE

IN EVERY DEPARTMENT OF HORTICULTURE

AND

RURAL AND DOMESTIC ECONOMY.

CONDUCTED BY GEORGE W. JOHNSON, ESQ.

EDITOR OF THE "GARDENER'S ALMANACK," ETC.

THE FRUIT AND FORCING-GARDEN, by Mr. R. Errington, Gardener to Sir P. Egerton, Bart., Oulton Park.

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TO OUR READERS.

ANOTHER volume is completed—another six months have passed—and the Spring leaves have come again. Upon that volume we look with entire satisfaction, for there is not a line we desire to blot from its pages; for those six months we have no cause but for gratitude; and with the Spring comes nothing but “smiles among its greenest leaves, and hopes among its flowers,” for we are promised new sprays to weave among fresh shoots from our old standards, and we have such golden threads as the following to bind us all together :—

“All the land I possess stands in beau-pots at my window, yet I take in your Serial, and ‘THE DICTIONARY’; have read every sentence, in both works, from the first to the last; have written marginal notes innumerable, and made extra indexes to each volume; and, I confess, that when I take up a new number of either work, after the fatigues of the day, I feel as if I were leaving the cares of the world behind me to take a pleasure excursion among fields and flowers.” Now that correspondent resides in the Salisbury Square of London, yet THE COTTAGE GARDENER aids “the pure pleasures of floriculture” even in that locality so unsuited for gardencraft.

Another letter of a different aspect comes next; it is from Mr. G. Baker, Florist, of Wells, in Somersetshire, and it bears this unasked-for testimony.—“I shall be most happy to answer the enquiry of any person who wishes for information as to the profit to be derived from advertising in THE COTTAGE GARDENER. I have invariably received more orders from an advertisement in this valuable work than any other, not excepting the more aristocratic publications.”

From fifteen other letters might we make quotations of similar encouragement, but we have extracted enough to show our readers somewhat of that which cheers us on to greater exertions, and sustains our confidence; yet we have greater praise—greater support—than those; for thus writes to us one, whom to know is to love :—“As a clergyman, and as, I humbly hope, a Christian, I beg to return, both to you and to the Authoress of ‘My Flowers,’ my sincere thanks for making your periodical subservient to the highest interests of man.”

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THE ROSARY.

PROPAGATION. By Cuttings.—Whenever any one becomes possessed of a beautiful flowering plant, he very properly desires to increase it, and in proportion to its facility of sending out roots from a small portion of the esteemed plant (which is usually called a *cutting*, but sometimes a *slip*), he will be tempted to try his skill, and be pleased, if he is successful. Now, there are few plants of a woody texture that strike or throw out roots more readily than the Rose, especially that class called the *China* and the *Tea-scented*. The *Bourbons* and *Noisettes*, also, strike readily, and so do the *Hybrids* of these classes. Neither need the cottager or the amateur deprive themselves of the pleasure of propagating their Roses in this way, though they may not have any convenience but a shady border. We will, however, suppose, first, that every convenience for striking Roses by cuttings is within the reach of the cultivator. These conveniences are a pit heated with hot water, and a tan-bed to plunge the cutting-pots in. With this apparatus, and proper soil to put the cutting in, every one, or nearly so, ought to grow. The first thing to do is to procure some good virgin loam, put it through a coarse sieve, and lay it up under shelter for a week or two to become moderately dry, then have the requisite number of pots, either new or clean-washed, ready, together with a quantity of broken potsherds for drainage. The best season to commence this operation is the month of either March or April. Cuttings should be made of last year's wood, cut into short lengths. If there is one bud below the soil with the leaf cut off, and another bud just above the soil with the leaf on it, the cutting is large enough. In planting the cuttings observe two things: first, to insert it nearly close up to the top; and, secondly, to place it so that the leaves on it shall point inwards. But previously to making the cuttings, have the pots ready, by first draining them well, an operation we need not stop to describe, as it has been often dwelt upon in THE COTTAGE GARDENER. Next, fill the pots with the pure loam, and a covering of sand, water it gently, and let it stand to settle whilst you are making the cuttings. Make no more at once than will fill one pot. Insert the cuttings in the manner above described round the edge of the pot, marking each kind in some way, either by number or name, so as to know them. Make the soil firm about the end of each cutting, and fill up the holes made by each planting-stick with some more sand, give a gentle watering, and plunge the pots in the tan-bed, shade from bright sun, and water when the surface is dry. We shall give a list shortly of the kinds most suitable to be propagated by this method.

T. APPLEBY.

PROPAGATING ROSES.—I can well recollect the excitement, with which I watched the first cuttings I succeeded in rooting. They were inserted firmly in pots, were honoured with the window sill inside, morning, evening and night, but were duly ensconced beneath the table, that stood close to the window, whenever the sun's rays came round to them.

Many a tickling of the inquisitive bump took place, before I could do anything to unravel the mystery of rooting; many a horse laugh was raised at my expense, when quietly placing my doubts before elder blue aprons, such a laugh as is often raised to cover the ignorance that strides in the assumption of superior wisdom. There were no cheap and easy methods of getting at knowledge then. One of the contributors to this work, was almost the only young gardener I had then heard of, who out of eight or nine shillings, per week, *would* have (I think the quarterly or monthly issue of) Loudon's Magazine. But with all the extra knowledge now diffused, the striking from cuttings is just as exciting to new beginners as ever it was, and never will

they feel more anxious as to the causes of success, than when they are achieving its pleasing results.

Among other plants now demanding increase of numbers, the queen of flowers should not be neglected. All the *China* group, the *Tea-scented*, the *Bourbons*, the *Noisettes*, most of the *perpetuals*, and a great many of these with the prefix *hybrid* as a handle to their name, may now, and for a few weeks to come, be struck by cuttings with great ease, if a little trouble only be incurred. This, with all the tender kinds, should take place at the period when they receive their final pruning, as what is removed will often be valuable for this purpose. The first thing necessary, is nice stubby young shoots, proceeding from last year's wood, of from one and a half to three inches in length. The second, cutting these off with a heel, close to the older wood; dressing them by removing the lower leaflets, and then allowing the base to dry for several hours, placing a little damp moss meanwhile on the *tops* of the cuttings; and thirdly, inserting these cuttings round the sides of pots, filled with light, sandy soil, well drained, and then plunging them in a mild hotbed; or fourthly, and this is better than the last; when numbers are to be provided for, make a slight hotbed, consisting of from twelve to eighteen inches of dung and leaves, to suit either hand lights or a small frame, with one or two sliding sashes; place some rough soil over the manure, and then several inches of light, sandy material, terminating all with a sprinkling of sand and charcoal dust; water, press down, allow the heat to rise a little, and then firmly insert the cuttings; syringe and shade in sunny weather, give air when warm, especially at night, *the object being to have the extra heat, chiefly at the base of the cutting*; pick off a decayed or damped leaf when necessary, and if due attention is paid, you will be rewarded in a few weeks with a number of plants, that if well treated will blow the same season. Many roses will strike root as cuttings, when thus slipped up close to last year's wood, when young, in this herbaceous looking state, that will not strike at all easily at any other time. We have, in our time, succeeded with almost every kind by this mode; but *Provence*, and *Moss*, and *Scotch*, were so bad to manage, that the little success we had with them might well be termed a failure.

R. FISH.

GREENHOUSE AND WINDOW GARDENING.

GENERAL MANAGEMENT OF GREENHOUSE—(Continued from vol. v. p. 398).

Time of Potting.—This, when necessary, should generally be done after pruning, and when fresh growth has taken place. The reason for this is, that it is advisable never to give more checks to a plant at once than cannot be avoided. The cutting down is a check, the repotting or shifting is another. Therefore, in both cases, we apply an extra stimulus for a short time immediately after, by keeping the plants closer and warmer. Some of our friends may wish to perform both operations at once, and thus save labour; but such wisdom will generally be found to be throwing away the pound to save the shilling. When cut down, or pruned, the energies in the stems, and unmutilated, untouched roots, are at once put forth in the production of fresh shoots. When these are formed and forming, and the plant is kept close for a time after shifting, fresh roots will soon be formed through their agency, upon the same principle that roots are protruded from a cutting of half-ripened wood under a hand-glass. The time, mode, preparation, &c., for potting have lately been referred to.

Time for Cuttings.—Every family has its family peculiarities; now we speak merely in general terms. I in-

stanced last week how the stem of the *Pelargonium* may be cut into pieces for cuttings. Many other soft-wooded, and hard-wooded plants, too, will succeed in the same manner, if you are content to give them *time*. Other things being equal, the older and harder the wood of the cutting, the longer will it be in striking. The younger the wood is, provided it is just hard enough at the base to possess a sufficiency of organisable material, the sooner it will strike; if too soft and spongy it will rot and damp off; hence the general time for propagating is regulated by the general time of pruning and fresh growth taking place. Small side shoots, from $1\frac{1}{2}$ to 3 inches in length, just getting firm at the base, cut to a point with a clean sharp knife, or taken off close to the older branch, and a few of the lower leaves removed, will succeed in the great majority of cases. It is desirable to get them in in April or May, in the case of slow growing plants, to have them established before winter. I have said so much on propagating, that I shall merely specify a few requisites; 1st, clean pots; 2nd, secure drainage by an inverted small pot inside a larger one, or by crocks so as to fill it three-quarters full; 3rd, place rough material or moss over the drainage to prevent the finer soil washing through it; 4th, cover it with an inch or so of sandy soil, similar to what the plants delight in, if a little charcoal is added all the better, finishing with a layer of pure sand, watering all well and then allowing it to drain before inserting the cuttings; 5th, insert the cuttings firmly, fill the small holes made by the dibber with sand, dew all over with the fine rose of a watering pot, allow the foliage to become dry, place each pot under a bell-glass or a number under a hand-light, and shade from the sun, either in a corner of the greenhouse, or better still in a close frame or pit without any artificial heat being applied, at least none before the cutting begins to swell at its base. Some things may have bottom heat at once, especially those that have been a little forced previously. Though shade be indispensable, yet as much light as the cuttings will endure must be given, increasing the quantity gradually, I lately recommended conical instead of flat-headed glasses, and did the same thing many years ago. I perceive in a contemporary, that in a large celebrated establishment, the superiority of these has *now* been discovered.

Sowing Seeds.—This may be done at any time when the seeds are thoroughly ripe. As it is of importance to have the seedlings potted off and established before winter, April and May are the best periods in several circumstances. Where there is no hotbed the latter period will be the best, and even then, for confining heat and moisture, the pot should be covered with a bell-glass, or a square of glass laid over it. Where there is a hotbed, such as a cucumber frame, the seeds may be sown a month or six weeks earlier, and hardened off as soon as they are fairly up and potted off. In sowing any light sandy soil will do; for all fine hairy-rooted plants sandy peat is the best. The pots should be nearly as well drained as for cuttings, watered and allowed to drain before sowing, as the less water they have afterwards until they are up the better. Hard seeds that have been kept dry over the winter will vegetate all the sooner for being steeped several hours in warm water, say from 13° to 14° . In covering the seeds the thickness should be regulated by the size of the seeds. Hence, for very small dusty seeds, the surface of the fine soil should be made smooth, the seeds evenly scattered over it and slightly pressed in, and then just dusted with a little fine sand, but in unpractised hands it is safer to be content with the slight pressing in, with a clean round board having a nail in the centre to hold by, and then place a square of glass over the pot, with moss or paper above to shade until vegetation has taken place.

After treatment of Cuttings and Seedlings.—This is

almost identical. Neither cuttings nor seedlings, if at all thick, will thrive long in the cutting and seedling pot. The sooner they are potted off the better they will thrive. Before that, air must be given to prevent them damping; first at night; next, night, morning, and evening; and lastly, when roots are well formed, during the day removing the glasses altogether from the cuttings: all this time, the little moisture necessary must be carefully given. The less it touches either the stems or leaves the better. When a little advanced, dust them overhead with a fine rose watering pot, or a syringe, but be careful to have the foliage dry before shutting up for the night. I am alluding to touchy things, and have previously shown that with the half-hardy and robust no such care is necessary. In potting off tender plants that are very small, three or four may be put round the sides of a four-inch pot; a strong growing one into such a pot at once. In every such potting, and every time that reshifting is necessary, a moist close atmosphere is of importance for a short time afterwards; thus lessening, by means of shading and syringing, the evaporating processes until the roots have begun to work in the new soil, when air must be given, first gradually, and ultimately plentifully.

Resting.—"Is there no rule by which we may at once know when and whether a plant wants resting?" No, not that I am aware of. If there were, gardening would be so easy that it would lose the best of its interest, and thinking and inquiring gardeners would even be *less* valued than they *now* are. There is quite as much difference among plants as there is among animals. The subject is too large to be dealt with in a general way. A few glances will show this. *There* is a bulb that has flowered some time ago, its foliage is now beginning to turn yellow, and this tells you to give up the watering pot for the season. After being kept dry, and it begins to vegetate, it will thank you for fresh earth and water. *There* is another plant that has been kept growing freely until the flower-bud is formed on the points of the young shoot; but the beauty and robustness of the flower depend upon that bud swelling slowly in a *cool airy* atmosphere. *Here* is a deciduous plant that blooms in summer; when done flowering it is exposed to the full sun and air; in winter it is kept cool and comparatively dry, and only excited into growth by the returning warmth of spring. *Other* plants there are that bloom in winter and spring on shoots of the previous summer's growth; witness the *Epacris impressa*, the fewer the shoots, the more beautiful the long wreaths of bloom, but *only* if these shoots are *fully perfected*, without that you may have fine looking shoots and no bloom on them. Therefore, by the end of July, we begin to think less of the *growing* principle than of the *maturing*, and hence we cannot get a place too *airy* or *sunny* for them; taking care, however, that the roots are not scorched. Except in such cases of winter flowering plants, it is advisable to give all plants a rest from low temperature in winter, as sturdy growth can only be secured by proportioning our heat to light. Little assimilation of fresh matter takes place in dull weather in winter; mere expansion by heat is not addition, the less we have of the former without the latter the better it will be.

We hope these hints (far from satisfying ourselves) will not damp our correspondents ardour, but rather engage them in the pleasing pursuit of knowing as much as possible of the plants they grow. With their little greenhouses they cannot do much with the plants described by Mr. Appleby, but for obtaining an insight into the principle of *resting* plants, &c., they will derive the greatest advantage from studying those most excellent practical essays.

R. FISH.

HOTHOUSE DEPARTMENT.

EXOTIC ORCHIDACEÆ.

PLANTS THAT THRIVE WELL IN POTS—(Continued from p. 386).

EPIDENDRUM SELLIGERUM (Saddle lipped E.); Mexico.—Though not very showy, this species is desirable on account of its powerful perfume. The flowers are brownish with stripes of pink, numerous produced on long racemes. 21s.

There is a variety with a purple shade much handsomer than the original species. 31s. 6d.

E. SKINNERII. See *BARKERIA SKINNERII*.

E. STAMFORDIANUM (Lord Stamford's E.); Guatemala.—The flowers are pale yellow with streaks and spots of rich brown. The flowers, unlike the rest of the genus, spring from the base of the pseudo-bulbs. They emit a pleasant perfume. The flowers are in branching panicles, and last a long time in bloom. It is a very desirable species. Strong plants 42s.

E. VERRUCOSUM (Warty E.); Mexico.—The whole flower is of a pinky hue; the sepals and petals are thinly spotted with crimson, the lip is very thickly dotted with this same colour. The flowers are nearly three inches across, and very fragrant. The flower stem is covered with limpid warty excrescences, hence its specific name. A very splendid species, but very rare. 105s.

E. VITELLINUM (Yolk-of-egg E.); Mexico.—Sepals and petals rich orange scarlet, the lip is of a bright golden yellow. The leaves and pseudo-bulbs are of a milky green colour, by which the plant may be distinguished from all the genus except one species, *E. glaucum*. It is the most beautiful of the whole family. It was discovered by Mr. Hartweg, in Mexico, at an elevation of nine thousand feet above the level of the sea, consequently does not require the highest temperature of the Indian house. It is a truly desirable species. 42s.

There is a variety known as *E. vitellinum major*, a fine variety, with much larger and more numerous flowers. The whole plant, also, is larger and stronger. 63s.

Culture.—Compost for them: rough pieces of fibrous peat and chopped sphagnum in equal parts, with about one-fourth added of broken potsherds and small pieces of charcoal. In potting use plenty of drainage, the pot at least one-third full of broken potsherds, place a little moss over the drainage, and fill the pot to the rim with the compost well mixed; then place on it the plant, after clearing it of all dead roots, decayed leaves, dirt, and insects; pack the compost neatly about the roots, rounding it off so as to leave the plants on a little hillock in the centre of the pot. Fix the plants firmly with short hooks to the round pseudo-bulb; sticks to the long-stemmed varieties. These plants generally begin to grow about March, and then is the time to pot them. All the species that are natives of Demarara and the West Indies require a higher temperature than those from the cooler regions of Mexico and Guatemala, yet the difference is not so much but they may be grown in one house. Those from the warmer regions in the warmest part, and the others in the coolest. During the time of growth the temperature should be 70° to 75° by day, and 60° to 65° by night. Whilst they are growing a moist atmosphere should be kept up, by having the paths, walls, and stages, almost constantly wet. The plants must be watered moderately at first, but more abundantly as the new pseudo-bulbs advance in size. Care must be taken that the water does not lodge in the hearts of the young leaves, especially during the night. They should also be gently syringed when growing, not with a driving force, but with a gentle shower as fine almost as dew sent gently through the very finest rosed syringe. When in flower the syringing must be withheld, as it would spot and spoil the beauty

of the blooms. As soon as the bloom is over the syringing must be renewed till the summer growth is perfected. This may be known by the full size of the pseudo-bulbs or stems, and an evident inclination they will shew to cease swelling or growing. As soon as this state is perceived, the syringing and watering at the root must be gradually reduced. This will generally happen about the middle of September, and that is a proper season for the resting of these plants to commence. After that time no more water at the roots should be applied, or only given if the pseudo-bulbs appear to shrivel very much, and even then very little will be necessary to keep them plump and healthy. During this resting season the great care of the cultivator must be directed to keeping the roots from perishing through the winter. This can only be done by having them nearly dry, but not too much so, or they would wither and perish. These may appear tedious particulars, but it is necessary, in order to be successful in the highest degree, to attend to the least minutiae in the points of culture, not only for orchids, but for every kind of flowers or plants. This is the winter treatment, which lasts till the end of February, and then recommences the growing and flowering season, or summer treatment above described.

ERIA.—This is a largish genus of not showy plants. Very few are worth the general grower's attention; we shall only enumerate the following:

ERIA FLORIBUNDA (Many-flowered E.); Singapore.—Sepals and petals white, delicately shaded with crimson; lip the same ground colour with a margin of crimson spots. The flowers are produced on long pendant racemes, and are really pretty. 42s.

E. LONGILABRIS (Long-lipped E.); Philippine Isles.—Sepals and petals white; lip much lengthened, hence its specific name, with the same ground colour and beautiful tints of purple. 31s. 6d.

E. POLYURA (Many-tailed E.); Manilla.—This is a pretty species, with flowers like clear little bells tinged with pink; the centre is rich purple and yellow. 42s.

E. STELLATA (Starry E.); Java.—Flowers produced on long racemes rising from the base of the plant. They are of a straw colour spotted with reddish brown; star-shaped, and rather pretty. 21s.

Culture.—These plants are of easy culture, only requiring to be grown in the warmest heat of the Indian house, growing them freely during summer; with a much less degree of heat and moisture in winter, and potting them when they begin to grow in the same compost as that described above for *Epidendrums*.

EULOPHIA GUINEENSIS (Guinea E.); Sierra Leone.—Sepals and petals brownish green; the lip light pink, slightly streaked with purple. It is a handsome species. 31s. 6d.

This is a small genus of orchids, chiefly terrestrial. The only one worth growing is the above species. It requires a compost of turfy loam, fibrous peat, and half-decayed leaf-mould, well mixed with a little river sand. Pot the bulbs in February in this mixture, draining them well, and place the bulbs so as to be just covered with the soil, and level with the rim of the pot. Give a gentle watering to settle the earth about the bulbs, and place them in a heat by day of 70° to 75°, by night of 60° to 65°. As they advance in growth, give moderate supplies of water till the new bulbs are freely formed, then gradually lessen the supply, and when the leaves turn yellow withhold it altogether, and place them in a house the temperature of which does not exceed 60° by day, and 55° by night. This season of rest ought to be begun in September, and continued to the time of repotting in February. With this management carefully followed up, this beautiful plant will grow well and flower finely.

GALEANDRA BAUERII (Mr. Bauer's G.); Mexico.—

Sepals and petals brown streaked with pale purple; lip rich purple streaked with shades of pale yellow. A very pretty species. The flower stem rises and droops from near the top of the pseudo-bulbs. In large strong plants each spike produces frequently as many as from ten to twelve flowers. The colours will be much heightened if the plant is well exposed to the light. 31s. 6d.

G. CRISTATA (Crested G.); Cayenne.—Sepals and petals white; labellum, or lip, purple, and of a curious lozenge shape; pretty but rare. 105s.

G. DEVONIANUM (Duke of Devonshire's G.); Rio Negro.—Sepals and petals brownish orange; lip large and showy, ground colour lilac shaded with white and yellow, with well defined dark purple stripes. When the plant is healthy and strong the stems are large and round, producing long leaves, gracefully drooping from amongst which the flower stems rise, having on each several of their truly beautiful flowers. This is the handsomest species of this handsome genus, but is very rare. 210s.

Culture.—Though this genus is a small one, the plants in it are worthy of every care. Being natives of the warmest parts of South America, they require, when growing, a high temperature: 75° to 85° by day, and 70° by night, with a moderate supply of water at the root. The usual compost of turfy peat and chopped sphagnum, in the proportion of two of the former and one of the latter, suits them well. Pot them high, that is, let each plant stand elevated about two inches above the level of the rim of the pot, the compost gradually sloping down rather within its edge; thus leaving each plant on a little hill in the centre. By this mode the water will never lodge about the base of the young shoots, but will run down to the edge of the pot, and sink down to the ample drainage, and escape without doing any injury to the young and tender shoots. *G. Bauerii* should, after the summer growth is perfected, be kept nearly dry; but the other two, being more succulent, require to be kept rather more moist, even through the season of rest. We have known several plants of the rare *G. Devonianum* that have perished through inattention to this point of culture. During the season of rest, which should be contrived to happen in our winter months, the temperature should range from 60° to 65° by day, and 55° by night.

T. APPLEBY.

FLORISTS' FLOWERS.

CALCEOLARIAS.—These beautiful summer-flowering plants should now present a bold vigorous appearance, with broad dark green leaves. Water freely as the plants advance in growth; but do not allow any flower-stems to remain at present. The green fly will now makes its appearance, and if not checked immediately will increase prodigiously, and soon cripple the leaves by sucking out the vegetable juices. Take them in time, and smoke with tobacco carefully and frequently, to destroy them whilst the numbers are small. Pot strong plants into their blooming-pots about this time, using a rich compost of strong loam, leaf-mould, and a small quantity of sand. Give plenty of drainage, and keep up a moist atmosphere on all favourable occasions by syringing the platforms on which they stand, and the pots themselves.

VERBENAS.—Those intended for early exhibitions should now be in a forward state. The blooms may now be allowed to appear. Like the *Calceolarias*, the green fly will appear at this season, and must be diligently destroyed by smoking. Cuttings may yet be put in for bedding purposes in June. See last week's number for notices of other florists' flowers. T. APPLEBY.

THE KITCHEN-GARDEN.

THOUGH in some localities the weather may, for general cropping, have been favourable enough, and much may have been accomplished in the way of seed sowing, planting, and surface stirring, yet there may be other localities where very little could have been done on account of the unkind condition of the soil, in consequence of the late drenching rains and other causes. Badly drained, cold and heavy soils will be very difficult to crop in due season, though a great deal may at all times be done by a little forethought, and making provision beforehand. In such a season as the present, drenching rains almost daily, the seed, of course, is much better out of the ground than if sown previously; and those who have sown early will meet, we fear, with a great portion of the seed bursting and rotting. The young plants, too, will be liable to become languid and weak, and not in a condition to resist the sudden changes and blighting winds which are always to be expected at the present time of the year, or the surface of the ground may have become so beaten down and caked over, that neither wind nor rain can act with sufficient power for the germination of the seed. These are all matters that require great attention and watching at this season, so that remedies may be put into practice; such as sowing a little seed on slight heat, or in sheltered corners, for transplanting in due season, watching for a favourable day, and shallow breaking the surface of the soil with a short-toothed rake, or with any other rake, so that its teeth are not allowed to penetrate too far at the first raking; such operation requires, of course, to be performed with some method; on the other hand, when kindly weather prevails, a drill may be drawn between each previous drill, and again sown thinly, the object of a little seed and time not being of so much consequence as disappointment of crop.

ROUTINE OF WORK.—*Angelica* should be sown, and the growing crop be well supplied with good manure and water; if fine coloured, crisp and transparent stalks are required. *Globe Artichokes*, thin out to the desired distance, and make a new plantation. Sow full crops of *Cauliflowers* and *Cape Brocolis*, sow also *Sweet Basil* and *Marjorum* in full crop. *Borecoles*, *Coleworts*, and *Brocolis*, in variety, as well as *Brussels Sprouts*, *Savoy*s, and other winter stuff. *Celery* should be sown in full crop, and slight hotbeds made for pricking early plants out.

Plant *asparagus* as soon as the young plants have made shoots two or three inches in length; keep up a succession of *salads*—*mustard* and *cress*, *radishes* in variety, and sowings of *lettuce*. *Dwarf Kidney beans* may be sown for transplanting under hoops and mats, or other shelter; sow tall varieties of *peas* in succession, a few at a time.

Make *mushroom beds* in cold and sheltered situations, applying a good portion of holding loam to the fermenting materials. Sow *Ridge cucumbers*, *vegetable marrow*, and *New Zealand spinach*. Apply good liquid manure to growing *rhubarb*; make new beds of *mint* in variety, and *tarragon* as soon as the shoots are three or four inches in length; divide *chives* and encourage their growth; this last is a beautiful herb for young *turkeys*, *chickens*, and *ducks*. Put in cuttings, and layer *sage*, *Lemon thyme*, *rue*, *rosemary*, *hyssop*, &c. Part roots of *wormwood* and *pennyroyal*. Look well to scarifying the *potato ground* when the weather is suitable, and choose a warm border for sowing a few early *turnips*.

JAMES BARNES.

MISCELLANEOUS INFORMATION.

OUR VILLAGERS.

By the Authoress of "*My Flowers*," &c.

I AM sorry to be obliged to confess, that one of the neatest, cleanest, and quietest cottages I know, is that belonging to a *bachelor*. It stands in a neat, snug garden, just behind the confines of our own grounds; and we sometimes turn down the little green lane that leads to it, on a summer's evening, when John M—— is returned from his day's work, to look at his bees, or gather fruit from his abundant borders. The first flowers of spring seem to blow soonest beneath the shelter of his thick hedges, the Mazereon puts forth her early bloom there, full to the south; and the little garden lays so warmly, sloping to the sun, and is so sheltered and secluded, that it seems as if the plants and fruit trees had nothing to do but to grow. A long row of bee hives stands under a close, sheltering hedge, and these seem to be the pride of John's heart; he watches and tends them as if they were children, and generally has an abundance of excellent honey to dispose of. All his ways are old-maidish and methodical; it is wonderful how soon *that* way comes on with single people. His little cottage could not be cleaner if he possessed the best house-maid in the land; and on his return from work, he lights his fire, prepares his supper, looks after his household matters, and sits down to his lonely meal with as much order and propriety as if he had a family round him; nay, perhaps more so, because all his little tidy ways are undisturbed.

We have gone in more than once when he has been taking his evening meal; and we could not help smiling at the scene. His cup and saucer, and knives, and plates, and table cloth were so clean! He was sitting so peacefully in his single blessed, or *un-blessed*ness, the fried bacon looked so delicate, and smelt so good, and the loaf of *home-baked* bread seemed so sweet and wholesome, that we could not help saying when we came away, "Certainly M—— does seem the happiest and cleanest man in the neighbourhood."

Yes; he bakes his own bread, and makes it with his own hand. He makes some common preserves too, when his fruit is plentiful; and I daresay he mends his own clothes, for he is very neat-handed, and looks better clothed than any of his neighbours, although he is but a day labourer. He rents a field, and cultivates it carefully, and never is he seen tipsy or idle. He is always busy doing something at his leisure hours, and his ready smile bespeaks contentment. Many a cottager may learn a useful lesson from John M——.

My sister was once in trouble about a swarm of bees, which had left the hive when no efficient person was at hand, and she sent in a hurry for M—— to come and secure them. He came; and effected the operation neatly and cleverly, and with all his little old-maidisms about him. He brought his *own veil* and his own gloves, and packed himself up for the undertaking, just like one who had no one else to take care of him, and had been used to look after himself all his life long.

While youth and health remain this is all very well. It is amusing to observe the quiet contentment, and methodical ways of one who is not yet quite an *old bachelor*; but when age and sickness arrive, as they will some day, I often think poor M—— will feel a solitary, uncared-for being. Even now he has no higher object in life, than to make provision for his own wants. He has no one to work for, no one to quicken his labours, no one whose future good he is anxious to secure. An old bachelor has no interest in life, all dies with him; and his latter days are generally passed as a lodger, in some cottage, without a creature to love and cherish him, and not even a fireside nook to call his own. The vision my fancy conjures up for poor M——'s latter days, is an asylum in the cottage of his dirty sister, Mrs. Martin, of whom I have already spoken. Martin's garden, and that of John M—— open into each other, and the two plots of ground are only less unlike one another, than are the brother and sister. I cannot imagine a more striking contrast than there is between all that belongs to these

children of the same parents. Dirt and distress, cleanliness and order, stand closely side by side; and do most strikingly set forth the beauty of the one, and deformity of the other. We pass through the empty, untidy, desolate garden of poor Martin, in which stands, here and there, a half-blighted, straggling apple tree, leaving behind us a cottage, whose aspect alone, is enough to send a man, who has no right principle in him, to the beer-house; and then a little wicket admits us to a bowery garden, in a sort of a gentle dell, *full* of all that a garden should contain; with a clean door way, and frontage to the cottage; no litter, no dirty pans and buckets, but everything in order; and the little box-edged walks leading in different directions, inviting a walk to the flower beds or the bees.

M—— once took in a man and his wife as lodgers, but that system, I fancy, did not work well, for John M—— and his lodgers soon parted, and he has wisely maintained his own rights and privileges ever since.

I am sorry to think that this quiet house-holder will, in time, grow old and dependant. It is all very well *now*; but he will, by and by, wish he had some one to care for him, and lead his feeble steps into sunny places, or play round him, as he sits to enjoy the sweet ever-refreshing air. A steady, stirring wife, and well-taught children, would make him happier, and more useful to his country. He would be training up sons and daughters to till the soil, or fight for their country's cause; and happiness is promised to him as the father of a family.

But the blessing, the *special blessing* is reserved for the man "that feareth the Lord." His children *only*, are to be as "olive plants round about his table." Let the labourer, 'the cottage gardener,' and the 'amateur' too, remember this: Unless a man *fears God*, his children may be but blighted branches. To inherit the blessing, he must be qualified for it; therefore, to fear and love Him who created and redeemed us, is to be happy here as well as hereafter, to bring down a blessing upon our children, and our children's children, and to "see the peace upon Israel." In this sense, the poorest man may be a benefactor to his country; and his prayers and example may do immeasurable good, far beyond the limits of his humble sphere.

Promising children, and a happy home are good; but the favour and blessing of the Lord are better.

WINTER TREATMENT OF BEE-HIVES—1850-1851.

(FROSTY and still weather, late, after dusk, or very early in the morning, is the best time for wintering bees; but care must be taken not to shake or knock the hive in the least degree. They would do no harm if buried even in October, but it would, perhaps, be well to defer it till after the icy season is over. It is recommended that, if possible, a thorough system of ventilation be adopted, whether by means of a tube, according to Dr. Bevan's plan, or otherwise. In Mr. Richardson's shilling book on bees, will be found mention of a very good plan, *i. e.*, resting the hives on a long frame of wood, so elevated from the floor or *stone* as that there may be a current of air underneath, and covered with plates of perforated zinc for the hives to stand on. Any number of hives of straw or wood might be ranged side by side on such a frame; the whole to be covered to some depth with leaves or cinders, the dust being removed as well as the smaller stones. This seems the best plan of all, but they would probably eat more than is desirable; therefore, it would be well to try every other practicable plan. If buried in the south, there should be no clay bottom, but a stony or gravelly substructure of some depth, whether artificially formed or otherwise. Also the hives should be thickly covered and tightly bound by a rope of straw. It is not recommended to use leaves, from their heating and rot-

ting tendency, excepting when very dry and under a shed. Wherever they are placed, let the hives be free from concussions and disturbance of every kind. The best time for disinterment is as late in the season as possible. Not earlier than settled mild weather in April, and on a day sunny and

warm throughout, as far as can be conjectured.—A COUNTRY CURATE.)

Such were the directions sent out in the autumn, and the results begin to arrive. J. W. Knight, Esq., Weston Favell, Northampton, sends the following:—

Number of hives and description of them; whether swarms, casts, old hives, or preserved bees.	Probable age of queen. Has she ever led off a swarm?	Whether buried in the ground, or in leaves, or otherwise, and at what depth?	What method of ventilation, if any, was had recourse to?	Date of interment, and state of weather.	Weight of each hive on interment; contents only as far as could be ascertained.	Nature of soil, and what aspect. (North best.)	General character of the winter.	Date of disinterment.	Condition of hives on disinterment.	Weight of contents on disinterment.	Perceptible loss in weight of each hive.	Further observations.
One; a late cast, to which bees from a stock had been united.	The queen found among the dead bees was a fine one.	Ground 2 ft. from top of hive to surface of ground.	Half-inch pipe from entrance.	20th December, 1850. Frosty.	7½ lbs. The cast being purchased in the hive, I could not tell the exact weight of contents. It was thought at the time of burial to be 9 lbs.; on weighing the hive afterwards, the above was found to be correct.	Gravel under shed. North	Mild.	20th March 1851.	Good; very dry.	Bees 14 Comb 2 Not a drop of honey was found in any of the combs.	5½ lbs.	Bees dead. A large portion dead sometime. Queen and a few bees around her appeared not to have been long dead. Four hives, not buried, lost from 1st December to 1st March, 3 months, 4½, 7½, 4½, 4½, or 5lb. 6 oz. each. The result of the experiment will not induce me again to try it, as the consumption equals that of bees not buried. I induced a cottager to place a hive (two casts united) under the roof of his cottage to the north. They were placed there the last week in December, and taken away the first week in February, and in forty days lost 10 oz.

TO CORRESPONDENTS.

*** We request that no one will write to the departmental writers of THE COTTAGE GARDENER. It gives them unjustifiable trouble and expense. All communications should be addressed "To the Editor of The Cottage Gardener, 2, Amen Corner, Paternoster Row, London."

GLAZIERS' CHARGES (Rev. J. S.).—We think them very high; but you can judge for yourself if you consult the prices given in some of our advertisements.

FARMING DIRECTIONS (L.).—If the duty were off paper, so that we could increase the number of our pages, we should have room for carrying out your suggestions.

GARDEN PLAN, &c. (W. J. M.).—Your plan is very good. Anoint your cow's teats with common lard. Cows, if kept clean, are not a nuisance.

FLEAS IN HEN'S NESTS (W. A. E.).—Let your box-nests be well scrubbed with soap and cold water, and then lime-washed. Are you sure that your hen-house is not likewise infected?

RAISIN WINE.—Take some Smyrna raisins, six pounds to the gallon. Let them infuse twelve days, stirring them well two or three times a day. Press the fruit in a hair bag in a wine or cider press. Tun it and fill up as it sinks from the fermentation. In a fortnight or three weeks it may be stopped close.

FORCED SWEET PEAS (M. C. E.).—There is a peculiar variety fitted for forcing gently, and blooming in pots moderately early. There is no peculiar treatment required. Sow them thinly in pots four and a half inches wide, and when they are about three or four inches high, transplant them, with the ball entire, into six-inch wide pots; *grow slowly*. Use rich light soil, and water freely when the plants are a foot high till they flower. Place three feet high twiggy sticks to them, dressed up neatly, so as to form compact plants. Any London seedsman would furnish you with the right variety, as well as the seed of that pretty plant *Saponaria calabrica*. If you fail in obtaining them, write to Mr. Appleby, Pine-apple Place Nursery, Edgeware Road.

VARIOUS QUERIES (Percy A. Reboul).—We cannot make out by your description what your first plant can be, you call it an Acacia, with flowers like a Chamomile. Such an Acacia we never saw or heard of. Pray send a small branch with a flower, if possible. By your description of your second plant, we think it must be *Aloe margaritaceu*, the Pearl Aloe, but we cannot be sure without a specimen. Your *rose-tree* is covered with insects [what kind?] and you ask if smearing it with sweet oil would injure it. We judge it would. We have seen apple-trees quite killed by painting them with oil to kill the mealy bug. A safer and certain remedy, if your tree is infested with *white scale*, is to wash the entire tree with strong soap-water, made in the proportion of one pound of the coarsest brown soap dissolved in five gallons of hot water, to be applied moderately warm, about 90°.

VERBENA SEED SOWING (Guillaume).—Any light sandy soil, with a little leaf-mould, will do. Only slightly cover the seeds, and place the pot or pan in a hotbed. We cannot see why yours did not come up if the seed was genuine.

AZALEA AND RHODODENDRON SEED (Ibid).—Sow in shallow pans or pots, filled with peaty soil, somewhat rough, to within one inch of the top, which inch should be filled with finer; water them well, and allow them to drain; press down their surface gently with a round board; then scatter the seeds regularly; dust over with a very little fine sandy heath mould; press again gently, and keep the pans in a close dark frame or pit shaded, and if there is a little heat, all the better. When the plants can be handled, prick them out into other pans, keep them close, and expose to the open air gradually. Sow now. You must calculate upon several years elapsing before you get flowering plants.

ABRONIA UMBELLATA (Ibid).—This may bloom the first season from seed, if you sow it early in a hotbed.

ERRATUM at foot of page 352, vol. iv.—Mr. Fish noticed this at the time. It is merely a misprint, and the contents almost sufficiently corrects it. The *Lantana Sallowii* will not be luxuriant unless in peaty or heath soil.

EPACRIS PLANT (Prester John).—The points drooping, if not the result of being dry, we can scarcely resolve the question, unless it be owing to bright sunshine after dull weather. Perhaps, however, it is *dying*. Examine its stem at the bottom, they generally decay there first. If not, to be sure your plant is watered, set it in a tub to soak, and then shade a little.

CUTTING DOWN EPACRIS (Ibid).—You must not cut to the surface of the pot, but only to the surface of the base, say an inch from it of the last year's shoots.

AZALEA MACRANTHA PURPUREA (I. V.).—We should say, from the appearance of the half-dead leaves, that the plant is in rather too large a pot, the temperature too low, and the thrips have been very busy. Syringing with clear soot water and very weak tea, made from laurel leaves, will help to stay their ravages; but your chief means of safety consist in giving the plant a higher temperature and using the syringe freely. When you use the soot or laurel water, lay the plant down, that it may not have its soil saturated. The high temperature and moisture will cause most of the leaves to fall, but you will have fresh ones, which you must endeavour to keep clear of such almost imperceptible vermin.

NERIUM OLEANDER (Ibid).—The treatment has often been given. You are quite wrong; when growing, it can scarcely have too much water, and it will stand the highest temperature you can give it in the greenhouse; rich soil. The shoots made this year, if matured, will bloom the next.

CLIANthus PUNICEUS (A Lover of Ferns).—This should not be cut down late in the autumn, but when it has done flowering. Under the best management in a pot, it is generally short-lived. As it propagates

so freely, and grows so quickly, it is best to have young plants, as from their vigour, they are less subject to the red spider. We have had flowering plants four or five feet in height, a twelve month from the cutting, but they never rested, unless for a short time in winter, when they were kept cool and dry, and they were managed, after being once potted, on the one-shift system. Old plants should not be too much cut down; but even then young plants will always easily beat them. Well-drained peat and loam suits it. A rather close atmosphere for the plants when young, and plenty of the syringe; exposing them fully to the air, before autumn, that the wood may be hardened.

ALLOTMENT FARMING (*Ibid*).—These papers cannot be purchased in a separate form.

PREVENTING SWARMING (*C. A.*).—"When does Mr. Payne recommend the small hives to be put on; and is it necessary to put on more than one at a time on each hive, to keep them from swarming?" Put the first small hive on at the end of April, or beginning of May, and when partially filled, place the second one between it and the stock; the adopting board should *always* be used, and in very hot weater, during swarming time, ventilation should be attended to; perhaps the easiest and most effectual method is to put three pieces of sheet lead between the adapter and the small hive; it gives a little opening, but not sufficient for a bee to pass.

FANCY GERANIUMS (*Lady-bird*).—There are more than one fancy geranium called *Nosegay*, but they are all very fit for beds, as far as their constitution and flowering go. They are good bedders, but not gay or rich bedders. *Lady Mary Fox* will mix with *Diadematum*, but not with *Unique*. There is only one, and that not a free flower, which will do with *Unique*, it is called *Moon's Defiance*. If all birds would utter such brief notes, and so much to the point, as *Lady-bird*, there would be little cause for "obduracy."

WARNING TO BEE-KEEPERS (*Sigma*).—"I bought a swarm in May last; in about a fortnight after they were hived in one of Payne's Cottage Hives. I placed a ten pound glass on the top; when that was filled, or nearly so, I raised it up, and placed a small hive between the stock-hive and the glass. When the glass was quite full, I removed it, and used the honey. The small hive I left on the top of the stock-hive even till January, when it was empty of honey; being determined that my bees should have even too much honey for their winter supply, rather than stand the chance of losing my first swarm through over greediness on my own part. I placed a board before the entrance of the hive, to keep the winter sun off it, so as not to tempt out the bees. Thinking the bees were so well provided for with winter food, I only fed them once or twice before Christmas, until the end of January, when I began to feed. I filled my feeder with sugared water, but I did not find that many bees came into it, and, therefore, I thought the swarm had plenty to eat, and did not want it. About a fortnight ago, at the beginning of March, I discovered that all my bees were *dead*. On opening the hive, I found all the combs empty, except about twenty cells. Why have I failed?" You should have weighed your stock of bees in the autumn, after taking the glass of honey, and if it had not 18 or 20 lbs. of honey in store, it should have been made up to that weight by feeding, as recommended again and again in *THE COTTAGE GARDENER*. Sugared water has never been recommended as bee-food; if that, and that only was given them, the disease you mention must not be wondered at. The best liquid food is 1 lb. of lump sugar, $\frac{1}{4}$ pint of water, and 4 ounces of honey, boiled for two minutes; and the best solid food is barley-sugar.

NAMES OF PLANTS (*Merioneth*).—1. *Fuchsia serratifolia*. 2. *Fuchsia Chandlerii*, we think. 3. Miss Lawrence's Rose (*Rosa Laurenceana*). 4. *Billardiera heterophylla*, now called *Sollya heterophylla*. 5. An *Acacia*, but impossible to say which from such a specimen. (*Lavinia*). We believe, from the leaves sent, that yours is *Crassula obvallata*, or House-leek-leaved *Crassula*. Not desirable in a good collection. Soil for it, a mixture of sandy loam, old mortar, brick-bats broken up into small pieces, and the pots should be well drained; the plants should be kept upon a dry shelf in the greenhouse, as near the glass as convenient, and have but little water during the winter months; but as the growing season advances, of course a little more water must be given.

HARTLEY'S ROUGH PLATE-GLASS.—Amongst many other testimonials in its favour, Messrs. Phillips and Co., 116, Bishopsgate-street, have received the following from N. Hibbert, Esq., Munden House, Watford: "As far as my experience has yet gone, your patent rough plate-glass, which I have used in my greenhouse and vinery, answers very well; and, notwithstanding its want of transparency, there is more light in the house than before. . . . I observed no burning of the plants, neither did my gardener."

CIRCULAR POND.—A correspondent, Mr. W. S. Ayrton, The Harehills, Leeds, says that "for the 'large circular pond,' mentioned at p. 326 of our last volume, nothing will be better than *Periwinkle*, blue and white; also, *London Pride* will answer, but it does not wear so bright a green in winter as the *Periwinkle*."

SUGGESTION (*A. B.*, *Carlisle*).—Thanks; we will endeavour to carry out your suggestion next week.

BONES (*E. F. M.*).—These will not dissolve in sulphuric acid unless broken; a boy with a heavy hammer would soon break them into two-inch pieces, which would be small enough.

EARLY HOEN CARROTS (*Ibid*).—We have had a good crop of these sown in the middle of June, after Walnut-leaved kidney Potatoes, though not so large as those sown earlier. Do not transplant them.

GARDEN IMPLEMENTS (*Rev. J. F. B.*).—We will endeavour to meet your wishes, but will wait until we see what is exhibited in Hyde Park and Windsor Park this year.

SYRINGING VINES (*M. R. C. S.*).—You may syringe them with great benefit whilst breaking, and until the blossom opens; afterwards it is best to have the air moistened, when needed, by wetting the paths.

GRAVEL SPLASHES.—D. suggests that "the splashing of gravel against a house may be prevented by a simple method, and not the least expensive, by laying a border of about two or three feet wide, and about two or three inches deep of *gravel washed*, so that nothing but the small stones remain, similar to the sea-beach shingle. No splash can come from gravel so prepared. The gravel or stones can be sifted to obtain all about one size. There will be no difference in appearance when laid down of gravel proper and the same so prepared. One man would prepare sufficient for a large house in a couple of days."

BEE FUMIGATOR.—A *Recent Subscriber* says, "I shall be glad to know, through the kindness of your correspondent B. B., what size and shape his fumigating lamp is made: whether it is fixed in the nozzle of the bellows; when used; and what kind of fungus he uses; also about what time of the day he likes best to operate on the *Hivites*?"

GOOSEBERRY INSECTS (*J. S.*, *Bury*).—What do you mean by Insects? Green-fly, or caterpillars, or Saw-fly? Be more precise. Your *Pear-tree* shoots die of canker—it may be from old age, or it may be from the roots descending into a wet soil;—state particulars, for we are not gifted with *clairvoyance*.

ROSE CUTTINGS (*Minnie*).—You will have in our pages to-day the information you seek.

AZALEA INDICA AND CARNATION SEED (*P. A. M.*).—Apply to any of the principal seedsmen who advertise in our columns. They will send the seeds by post.

MELILOTUS LEUCANTHA SEED (*R. A.*).—We think the only difference in the samples is that one is better than the other. We say we think, because there is so much similarity in the seeds of many of the *Melilots* that no one can discern a difference.

TOP-KNOTS OF POLAND FOWLS (*Incubator*).—Wash them with warm water and soap. We believe any respectable person may see the Royal Poultry House at the Home Farm, Windsor. Sell your fowls to a dealer, without advertising.

FERTILIZING POWDER (*A. U. F.*).—Be assured it is all a quack. No powder applied in homœopathic quantities enveloping the seed can by possibility afford sufficient manure for the future. The quintessence of guano would not do it, if such a preparation could be made.

ENGLISH FRONTINAC (*Miss G.*).—To six gallons of water put three full pints of elder flowers picked clean from the stalks; boil it rather more than quarter of an hour; strain it off; then put the decoction on the fire again, adding 18 lbs. of lump sugar: boil it and strain it well. When nearly cold, put in the juice of six lemons, and the rind thinly pared, with 6 lbs. of raisins stoned, and a little good yeast. Beat it up as it works; in two or three days put it into the cask, and as soon as the fermentation begins to subside stop it up. Bottle in six months, and in doing so put into each bottle a dessert spoonful of brandy.

RAISIN WINE (*Ethelreda*).—To every gallon of cold water add seven pounds of Malaga and Smyrna raisins, let it stand sixteen days, press it off, and put it into a cask, let it stand open four months with some paper over the bung-hole to keep out the dust, then add half a pint of brandy to every gallon; draw it off in a fresh cask before adding the brandy.

GRAPE WINE.—Take six pecks of grapes, pick them from the stalks, put them in a tub and just break them with your hand, then add four gallons of water, let it stand three days, then break the grapes *well*, then drain through a sieve into a tub, measure it to see what more you want to make up *nine* gallons, well bruise the grapes in the sieve adding the water required, and let it stand twenty-four hours, strain it off again, then put it into a cask with thirty pounds of loaf sugar, keep stirring it and filling it up as long as it keeps working, then bung it down and let it stand eighteen months, after which bottle it, first rining the bottles with a little brandy. If the grapes are *not* ripe, put four pounds more of sugar.

ORANGE WINE.—Take twelve Seville oranges, one lemon, and three pounds and a half of loaf sugar to the gallon. Boil the sugar and water twenty minutes, and clarify with the white of an egg beat very fine, one white to every three gallons; put it into a tub and let it stand till it is as cool as new milk, then put the juice of your oranges and lemons, and one-third of the peels pared very thin, pour the juice through a cheese cloth, which leave with the pulp and pips, and tie loosely and hang it on a stick across the tub, so that it remains in the wine in the cheese cloth, for should the pulp mix with the wine you will not be able to clear it again; let it stand two days in the tub, and then put it into your cask; in about a week put one pint of brandy to every ten gallons of wine, and let it stand about three more weeks before you stop it up.

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GRASS SEEDS. Finest **LAWN GRASS SEEDS**, perfectly free from Weeds and Coarse Grasses, 21s per bushel, 3s per gallon, or 1s 3d per pound, with instructions. To insure a pure Turf of finest Dwarf Grasses, Messrs. SUTTON strongly recommend the sowing the above Seeds, whereby the great expense of cutting, carting, and laying Turves may be avoided. **PERMANENT PASTURE GRASSES**, mixed expressly to suit the soil for which they are required, at the reduced prices of 22s 6d, to 28s per acre, viz.:—

BEST MIXTURES, for laying down Land to Permanent Meadow or Upland Pasture, per acre	£	s.	d.
DITTO, for laying down Reclaimed Marshes and Common Inclosures, per acre	1	8	0
DITTO, for fine Park Lands, near Mansions, per acre	1	15	0
DITTO, for Irrigation or Water Meadow, per acre	1	6	0

SUTTON'S RENOVATING MIXTURE, consisting of Perennial Clovers and fine Grasses, for improving old Parks, Meadows, and Upland Pastures.

JOHN SUTTON and SONS having reduced the price of these Seeds 25 per cent., viz., to 10d per lb., or 1s 6d per gallon, great improvement in Pastures, &c., may be effected at a small cost, by the application of 6 or 8 lbs. per acre, sown immediately upon the old Turf.

We are almost daily receiving, unsolicited, the most gratifying letters from our customers, in praise of our Seeds; and though we refrain from publishing names unnecessarily, we have much satisfaction in quoting the following:—

From a Member of the Council of the Royal Agricultural Society.—"Messrs. SUTTON,—I was particularly pleased with your Grass Seed, which I employed by itself, for laying down some fresh broken-up Land. It became a close fine sward by August. I have now about 30 acres of land to sow immediately, &c., &c., and shall be glad of your advice for the purpose."

From the Land Agent at a large Estate in Hampshire.—"All the kinds of Grasses sown separately grew admirably, and the 20 acres of Park laid down with your Mixture last spring is most excellent. We are anticipating a large crop of Hay, and I can see, by the various habits and successional growths of the several kinds, that we shall always have a fresh growing bite for the cattle after the Hay is cut. The Clovers, too, I see, are plentiful."

From a Clergyman, an eminent Agriculturist and Member of the Royal Agricultural Society.—"I have had the pleasure of praising your Seeds in many quarters beside that to which you refer. This I have done from a sense of justice only."

Another Clergyman writes us.—"My Turnip crops are the admiration of all the farmers round, especially the Swedes and your Purple-topped Hybrid. I hope you have some of the same kind this year, as I am certain the superiority in my crops is mainly owing to the stocks."

The above are similar to hundreds of others.

N.B.—Instructions for Sowing accompany every parcel of Grass Seeds; and any other information required by post will be promptly given.

Goods delivered free of carriage to any Office in London, Bristol, Gloucester, Exeter, Southampton, &c.

Reading, Berks, March 22.

NEW and CHOICE FLOWER SEEDS, GERMAN STOCKS, GERMAN

ASTERS, &c.—We have selected, out of a large collection of Flower Seeds, twenty of the most beautiful and showy varieties, each sort distinct in colour, and calculated to produce a fine effect when planted out in beds or groups in the flower border. We have had each variety distinctly marked with its Botanical and English name—height—time of flowering—colour of the flower—manner of growing—whether erect or trailing, &c., &c.—the time it should be sown, and other valuable hints as to its cultivation. In selecting these twenty varieties we have been careful to exclude all which are shy-bloomers, or have an insignificant appearance; so that the collection will comprise only those which are really showy and handsome, and which we believe would prove to the entire satisfaction of any lady or gentleman who might be disposed to order them. The German Stocks and Asters, especially, are most superb.

The Twenty Packets are neatly packed up in one paper, and will be sent free by post, to any part of the kingdom, for Five Shillings.

J. C. WHEELER AND SON,
Nurserymen and Seedsmen, by Official Appointment, to the Gloucestershire Agricultural Association.
KINGSHOLM NURSERY, AND 99, NORTHGATE STREET, GLOUCESTER.

ROBERT M. STARK, Nursery and

Seedsmen, begs to intimate that his **CATALOGUE of FLORISTS' FLOWERS, BEDDING PLANTS, &c.**, for the present season, is now ready, in which will be found many novelties interesting to the florist and botanist.

Edinburgh, Edgehill Nursery, Dean, and 1, Hope-street, March 24th.

WARRANTED UNEQUALLED.

ROBERT WHIBLEY is now supplying Selections in Pots, and by post, from his select Collection of **FUCHSIAS**. Twelve varieties, new and distinct, of last year, 10s 6d cash. See List containing a great variety of choice new Plants for one stamp.

Nursery, Kennington, London.

GENUINE HORTICULTURAL

and Agricultural Seeds. **JAMES CHARTRES**, Seedsmen, &c., King William-street, City, London, begs most respectfully to call the attention of purchasers to his establishment, where will be found an extensive stock of Kitchen-Garden, Agricultural, and Flower Seeds, selected with the greatest care, and grown chiefly under his own inspection.

J. C. takes this opportunity to return his best thanks to all who have favoured him with their commands during the past season; and it is with much pleasure he can state that numerous ladies and gentlemen who have visited his establishment, as a proof of their satisfaction, have recommended their friends.

A Descriptive Catalogue can be had on application. Jan. 2, 1851.

W. AND S. GAINES, Seedsmen,

Florists, and Herbalists, opposite King Street, Covent-Garden Market, London. Dealers in all sorts of Medicinal Herbs, Essential Oils, and Distilled Waters; also, in the celebrated prepared **LENTIL POWDER**, or Invalids Food.

W. and S. G. respectfully inform the Nobility and Gentry that they have a choice selection of Vegetables of all kinds for **PICKLING**. Importers of **GOLD and SILVER FISH**.

BEEES. 4th edition, fcap., cloth,

with 100 Engravings, price 4s. **THE BEE-KEEPER'S MANUAL**; or, Practical Hints on the Management and Complete Preservation of the Honey Bee. By **HENRY TAYLOR**.

"All that is required for practical purposes, will be found in this volume."—*Bell's Messenger*.

*** Order *Taylor's Bee-Keeper's Manual*, 4th edition, of any bookseller.

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COUGHS, ASTHMA, and INCI-

PIENT CONSUMPTION are effectually cured by **KEATING'S COUGH LOZENGES**.

During a period of more than 40 years this valuable medicine has triumphantly borne the severest test of public opinion, and upon that sound basis alone it has gradually but surely won its way to pre-eminence, until it is now universally acknowledged to be the most effectual, safe, and speedy remedy ever offered to the world for that large class of disease which affects the Pulmonary Organs.

Prepared and sold in Boxes, 1s 1½d, and Tins, 2s 9d, 4s 6d, and 10s 6d each, by **THOMAS KEATING**, Chemist, &c., No. 79, St. Paul's Churchyard, London.

Sold Retail by all Druggists, &c.

IMPORTANT TESTIMONIAL.

Church-street, Folkestone, Nov. 22nd, 1848.
SIR,—Having been troubled with a very bad Cough for the last eight months, I applied to Mr. HAMMON, Chemist, of this town, for some relief; he recommended me your "**COUGH LOZENGES**," which I am happy to say cured me in a week. I beg most cordially to recommend them, and beg you will not hesitate to make this letter public; such a valuable remedy cannot be too highly recommended. I have the honour to be, Sir, your obedient humble servant,
JOHN HILL, BART.

WEEKLY CALENDAR.

M D	W D	APRIL 10—16, 1851.	WEATHER NEAR LONDON IN 1850.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bef. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in In.						
10	Th	Beech leaves.	29.664—29.538	50—34	N.E.	0.04	18 a. 5	45 a. 6	2 44	9	1 27	100
11	F	Camb. Term ends.	29.800—29.691	47—25	N.E.	—	16	46	3 26	10	1 10	101
12	S	Oxford Terms ends.	29.819—29.598	51—38	N.W.	0.01	14	48	4 0	11	0 54	102
13	SUN	PALM SUN. Swift seen.	29.341—29.218	51—25	S.W.	0.12	12	50	4 29	12	0 38	103
14	M	Mole Cricket churs.	29.533—29.288	55—32	S.W.	0.03	9	52	4 57	13	0 23	104
15	Tu	Common Flesh Fly seen.	29.719—29.548	50—36	E.	0.08	7	53	rises.	14	0 7	105
16	W	Lady-Bird seen.	29.785—29.719	50—34	N.	—	5	55	7 a. 44	15	0 af. 8	106

WILLIAM KENT, of whose progress through life we are about to place a sketch before our readers, deserves our notice as the founder of landscape gardening, and our imitation as one who dared to break loose from the trammels of fashion, and to obey the more enlightened dictates of the good taste with which he was richly gifted. It is very difficult to draw a just line between presumption and self-reliance, yet, no two mental qualities are productive of more widely differing results. He, who is presumptuous, infallibly bears himself on to disgrace, if not to ruin; whereas, without self-confidence, no man can win his way to virtuous eminence. The distinction is, that the one is bold, from feeling his own strength, whilst the other is daring, from a vain estimate of the weakness of his competitors. Kent had no presumption, but through life he was confident, yet untinged by obstinacy. He was born in Yorkshire, in 1685, and was apprenticed to a coach painter, but aspiring to a higher path, he repaired to London, though unaided by his humble connections, and without the permission of his master. Thence, aided by some gentlemen of his own country, he proceeded with Mr. Talwin to Rome, where he studied under the Chevalier Luti, and gained the second prize of the second class in the Academy. His first resources failing, he found a patron in Sir W. Wentworth; and finally in Lord Burlington, with whom he returned to England in 1719, and resided for the remainder of his life at that nobleman's house. As a painter, however, notwithstanding the influence of his patron, the estimation in which he was held soon sunk to below mediocrity. As an architect and designer of furniture he succeeded better, and was much employed. By the patronage of the Queen, and through the interest of many noblemen, he was appointed Master Carpenter, Architect, Keeper of the Pictures, and finally chief Painter to the Crown, the emoluments of which produced about £600 per annum. From 1743 to 1748, he was much troubled with various inflammatory attacks which terminated his life on the 12th of April, in the last named year, and he was buried in the Earl of Burlington's vault at Chiswick. It is said that Kent frequently declared that he caught his taste in gardening from the perusal of Spencer's picturesque descriptions. Walpole, Mason the Poet, and G. Mason, highly panegyrize him, and, indeed, by general consent he is estimated as the first general practitioner of landscape gardening. For the remaining particulars we are indebted, almost exclusively, to Mr. Walpole, his contemporary.

His portraits bore little resemblance to the persons that sat for them; and the colouring was worse, more raw and undetermined than that of the most errant journeymen to the profession. The whole lengths at Esher are standing evidences of this assertion. In his ceilings, Kent's drawing was as defective as the colouring of his portraits, and as void of every merit. I have mentioned Hogarth's parody, if I may call it so, of his picture at St. Clements. (This was an Altar-piece of angels playing on various instruments, very ill-drawn, and still preserved, perhaps, in the Vestry-room of St. Clement Danes.) The hall at Wanstead is another proof of his incapacity. Sir Robert Walpole, who was persuaded to employ him at Houghton, where he painted several ceilings, and the staircase, would not permit him, however, to work in colours, which would have been still more disgraced by the presence of so many capital pictures, but restrained him to chiaro scuro. If his faults are thence not so glaring, they are scarce less numerous. He painted a staircase in the same way for Lord Townshend, at Rainham. To compensate for his bad paintings, he had an excellent taste for ornaments, and gave designs for most of the furniture at Houghton, as he did for several other persons. Yet chaste as these ornaments were, they were often unmeasurably ponderous. His chimney-pieces, though lighter than those of Inigo, whom he imitated, are frequently heavy; and his constant introduction of pediments, and the members of architecture over doors, and within rooms, was disproportioned and cumbrous. Kent's style, however, predominated authoritatively during his life; and his oracle was so much consulted by all who affected taste, that nothing was thought complete without his assistance. He was not only consulted for furniture, as frames of pictures, glasses, tables, chairs, &c., but for plate, for a barge, for a cradle. And so impetuous was fashion, that two great ladies prevailed on him to make designs for their birth-day gowns. The one he dressed in a petticoat decorated with columns of the five orders; the other like a bronze, in a copper-coloured satin with ornaments of gold. He was not more happy in other works, in which he misapplied his genius. The gilt rails to the hermitage at Richmond, were in truth but a trifling impropriety; but his celebrated monument of Shakspeare in the Abbey, was preposterous. What an absurdity to place busts at the angles of a pedestal, and at the bottom of that pedestal! Whose choice the busts were I do not know, but though queen Elizabeth's head might be intended to mark the era in which the poet flourished, why were Richard II., and Henry V., selected? Are the pieces under the names of those princes two of Shakspeare's most capital works? or what reason can be assigned for giving them the preference? As Kent's genius was not universal, he has succeeded as ill in Gothic. The King's bench at Westminster, and Mr. Pelham's house at Esher, are proofs how little he conceived either the principles or graces of that architecture. Yet he was sometimes sensible of its beauties, and published a print of Wolsey's noble hall at Hampton-court, now crowded and half hidden by a theatre. Kent gave the design for the ornaments of the chapel at the Prince of Orange's wedding, of which he also made a print. Such of the drawings as he designed for Gay's Fables, have some truth and nature; but, whoever would search for his faults, will find an ample crop in a very favourite work of his, the prints for Spencer's Fairy Queen. As the

drawings were exceedingly cried up by his admirers, and disappointed the public in proportion, the blame was thrown on the engraver, but so far unjustly, that though ill executed, the wretchedness of drawing, the total ignorance of perspective, the want of variety, the disproportion of the buildings, and the awkwardness of the attitudes, could have been the faults of the inventor only. There are figures issuing from cottages not so high as their shoulders, castles in which the towers could not contain an infant, and knights who hold their spears as men do who are lifting a load sideways. The landscapes are the only tolerable parts, and yet the trees are seldom other than young beeches, to which Kent as a planter was accustomed. But in architecture his taste was deservedly admired; and without enumerating particulars, the staircase at lady Isabella Finch's, in Berkeley-square, is as beautiful a piece of scenery, and considering the space, of art, as can be imagined. The Temple of Venus, at Stowe, has simplicity and merit, and the great room at Mr. Pelham's, in Arlington-street, is as remarkable for magnificence. I do not admire equally the room ornamented with marble and gilding at Kensington. The staircase there is the least defective work of his pencil; and his ceilings in that palace from antique paintings, which he first happily introduced, show that he was not too ridiculously prejudiced in favour of his own historic compositions. Of all his works, his favourite production was the Earl of Leicester's house at Holkam, in Norfolk. The great hall, with the flight of steps at the upper end, in which he proposed to place a colossal Jupiter, was a noble idea. How the designs of that house, which I have seen an hundred times in Kent's original drawings, came to be published under another name,* and without the slightest mention of the real architect, is beyond comprehension. The bridge, the temple, the great gateway, all built, I believe, the two first certainly, under Kent's own eye, are alike passed off as the works of another; and yet no man need envy or deny him the glory of having oppressed a triumphal arch with an Egyptian pyramid. Holkam has its faults, but they are Kent's faults, and marked with all the peculiarities of his style."

Upon Kent's taste and style of landscape gardening, Mr. Walpole is still more particular. "I call the sunk fence the leading step to a more picturesque gardening, because no sooner was this simple enchantment made, than levelling, mowing, and rolling, followed. The contiguous ground of the park without the sunk fence, was to be harmonized with the lawn within; and the garden in its turn was to be set free from its prim regularity, that it might assort with the wilder country without. The sunk fence ascertained the specific garden, but that it might not draw too obvious a line of distinction between the neat and the rude, the contiguous out-lying parts came to be included in a kind of general design: and when nature was taken into the plan, under improvements, every step that was made pointed out new beauties and inspired new ideas. At that moment appeared Kent, painter enough to taste the charms of landscape, bold and opinionative enough to dare and to dictate, and born with a genius to strike out a great system from the twilight of imperfect essays. He leaped the fence, and saw that all nature was a garden. He felt the delicious constraint of hill and valley changing imperceptibly into each other, tasted the beauty of the gentle swell, or concave scoop, and remarked how loose groves crowned an easy eminence with happy ornament, and while they called in the distant view between their graceful stems, removed and extended the perspective by delusive comparison. Thus the pencil of his imagination bestowed all the arts of landscape on the scenes he handled. The great principles on which he worked were perspective, and light and shade. Groupes of trees broke too uniform or too extensive a lawn; evergreens and woods were opposed to the glare of the champaign, and where the view was less fortunate, or so much exposed as to be beheld at once, he blotted out some parts by thick shades, to divide it into variety, or to make the richest scene more enchanting by reserving it to a farther advance of the spectator's step. Thus selecting favourite objects, and veiling deformities by screens of plantation; sometimes allowing the rudest waste to add its foil to the richest theatre, he realised the compositions of the greatest masters in painting. Where objects were wanting to animate his horizon, his taste as an architect could bestow immediate termination. His buildings, his seats, his temples, were more the works of his pencil than of his compasses. We owe the restoration of Greece and the diffusion of architecture to his skill in landscape. But of all the beauties he added to the face of this beautiful country, none surpassed his management of water. Adieu to canals, circular basins, and cascades tumbling down marble steps, that last absurd magnificence of Italian and French villas. The forced elevation of cataracts was no more. The gentle stream was taught to serpentine seemingly at its pleasure, and where discontinued by different levels, its course appeared to be concealed by thickets properly interspersed, and glittered again at a distance where it might be supposed naturally to arrive. Its borders were smoothed, but preserved their waving irregularity. A few trees scattered here and there on its edges sprinkled the tame bank that accompanied its meanders, and when it disappeared among the hills, shades descending from the heights leaned towards its progress, and framed the distant point of light under which it was lost, as it turned aside to either hand of the blue horizon. Thus dealing in none but the colours of nature, and catching its most favour-

* "The plan and elevations of the late Earl of Leicester's house at Holkam, were engraved and published, London, 1761. fol. by Mr. Brettingham, architect, who had not the modesty to own that it was built after the design of Kent." Gough's Brit. Topogr. vol. ii. p. 25.

able features, men saw a new creation opening before their eyes. The living landscape was chastened or polished, not transformed. Freedom was given to the forms of trees; they extended their branches unrestricted, and where any eminent oak, or master beech had escaped maiming and survived the forest, bush and bramble were removed, and all its honours were restored to distinguish and shade the plain. Where the united plumage of an ancient wood extended wide its undulating canopy, and stood venerable in its darkness, Kent thinned the foremost ranks, and left but so many detached and scattered trees, as softened the approach of gloom, and blended a chequered light with the thus lengthened shadows of the remaining columns.

"I do not know whether the disposition of the garden at Rousham, laid out for General Dormer, and in my opinion the most engaging of all Kent's works, was not planned on the model of Mr. Pope's, at least in the opening and retiring shades of Venus's vale. The whole is as elegant and antique as if the emperor Julian had selected the most pleasing solitude about Daphne to enjoy a philosophic retirement. That Kent's ideas were but rarely great, was in some measure owing to the novelty of his art. It would have been difficult to have transported the style of gardening at once from a few acres to tumbling of forests; and though new fashions like new religions (which are new fashions), often lead men to the most opposite excesses, it could not be the case in gardening, where the experiments would have been so expensive. Yet it is true, too, that the features in Kent's landscapes were seldom majestic. His clumps were puny, he aimed at immediate effect, and planted not for futurity. One sees no large woods sketched out by his direction. Nor are we yet entirely risen above a too great frequency of small clumps, especially in

the elbows of serpentine rivers. How common to see three or four beeches, then as many larches, a third knot of cypresses, and a revolution of all three! Kent's last designs were in a higher style, as his ideas opened on success. The north terras at Claremont was much superior to the rest of the garden. A return of some particular thoughts was common to him with other painters, and made his *hand* known. A small lake edged by a winding bank with scattered trees that led to a seat at the head of the pond, was common to Claremont, Esher, and others of his designs. At Esher,

Where Kent and nature vied for Pelham's love, the prospects more than aided the painter's genius—they marked out the points where his art was necessary or not; but thence left his judgment in possession of all its glory. Having routed *professed* art, for the modern gardener exerts his talents to conceal his art, Kent, like other reformers, knew not how to stop at the just limits. He had followed nature, and imitated her so happily, that he began to think all her works were equally proper for imitation. In Kensington-garden he planted dead trees, to give a greater air of truth to the scene—but he was soon laughed out of this excess. His ruling principle was, that *nature abhors a straight line*. His mimics, for every genius has his apes, seemed to think that she could love nothing but what was crooked."

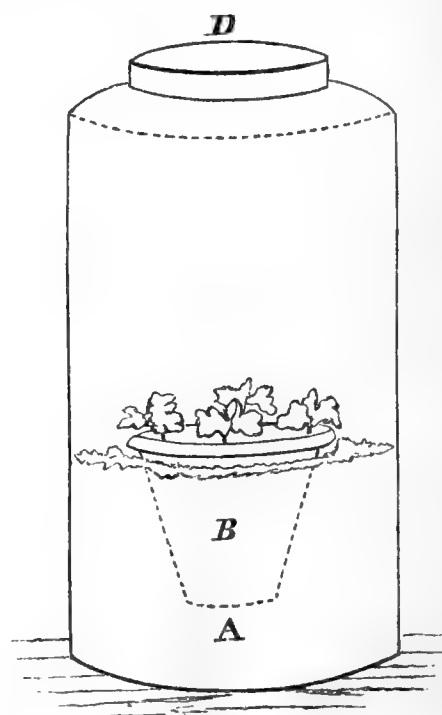
METEOROLOGY OF THE WEEK.—At Chiswick, from observations made during the last twenty-four years, the average highest and lowest temperatures of these days are 56.1° and 36.8°, respectively. The greatest heat, 73°, occurred on the 9th, in 1844, and the lowest cold, 22°, on the 11th, 1843. Rain fell during 82 days of the period, and 86 were fine.

WE are always gratified by every display of well-directed industry, and no one can admire more than we do the power, and accuracy amid intricacy, displayed in all the engines, machines, and implements employed in our national mines, workshops, and manufactories. All these combinations proclaim that wealth is making giant efforts to increase its wealthiness;—efforts praiseworthy, and diffusing competency and comfort to millions necessarily enlisted to aid and sustain those efforts. We survey the whole and see the good effected, and we rejoice over that good. But, if some one steps forth and proposes some little implement, some simple arrangement of household utensils, whereby the home comforts and innocent luxuries of the employed millions can be increased at a cost quite within their means, we look upon that with quite as much pleasure as upon the steam-impelled giants of the mechanical world; and this pleasure springs from a consciousness that there is another honey-drop sprinkled in the cup of millions—that cup which, though "well-mixed," man has so contrived that it usually brings somewhat too much of the bitter to the lip. Any device, then, that sweetens the every-day life of the mass of our fellow-men, we hail with more than ordinary pleasure; and if it be only a mode whereby he may obtain a violet in winter to sweeten his chamber, or an early cucumber to render his crust of bread more palatable, we rejoice over the device, and spare no pains to render its adoption easy and general.

One of such devices is contained in the following letter from a gentleman who signs himself C. J. P., *Dawlish*; and though there is nothing new in the principle, yet there is some novelty and merit in the mode of its application, so we give it this prominence—

"I am induced to send you the description of a very economical and excellent means of raising cucumbers, vegetable marrow, and other plants usually requiring a hotbed or greenhouse for their propagation. The well-known philosophical fact, that vegetation is most luxuriant where the atmosphere is both moist and warm, was the principle that guided me in the experiment I am now about to detail, and which in the result proved singularly satisfactory. I had a common large-sized garden pot filled one-third from the bottom with coal ashes, to serve as drainage; on that a third consisting of well-decomposed leaves and stable manure mixed together as a compost; and on this was placed the

remaining third of rich black peat mould, in which, as a first experiment, were set twenty-two vegetable marrow seeds. A large flint glass bottle, such as those exposed in chemists' shop windows, and usually containing poppy heads, &c., and which, at any of the large glass works, may be purchased for a very small sum, was now procured, the circumference of the mouth of the bottle being about two inches greater than the circumference of the garden pot at its widest part. The bottom of the glass bottle and the sides, to the height of the rim of the garden pot, were then *lined*, as it were, with damp moss, and the pot, filled as above described, gently slung by means of four strings passed round it into the bottle. For the sake of neatness of appearance, the strings are confined to the outside of the neck of the bottle by means of one of the ordinary elastic vulcanized India-rubber rings.* The moss serves a two-fold purpose; first, to imbibe the moisture, which is afterwards evaporated by the heat of the sun or room in which the bottle is placed, and is again condensed in the interior of the sides of the bottle in the form of dew, thus serving constantly to maintain the warm damp atmosphere so favourable to vegetation. Over the mouth of the bottle is placed a glass cover, removable at pleasure. The following rough diagram may serve to illustrate the above plan.



A, damp moss. B, the garden pot with seeds, when plunged into the moss. D, the moveable glass cover.

* Instead of representing the pot of seedlings suspended by strings from the cover of the glass jar, we have shown it as plunged in the moss, which we think more simple, and more likely to keep up a proportionate root-action.—ED. C. G.

"As an instance of the great rapidity with which seeds germinate in this apparatus, I may mention, that of twenty-two vegetable marrow seeds, so planted on the evening of Monday, March the 17th, in the present year, thirteen were above ground on Sunday morning, March the 23rd, without the beneficial influence of even one day's exposure to the rays of the sun, in consequence of the late incessant rains. The afternoon of that Sunday proving fine, the bottle was for about two hours exposed to the full rays of the sun, the condensation of vapour on the interior surface of the glass being so great, as to render the seedlings, for the time, almost invisible; by the following day every seed had germinated. I ascertained the temperature of the air inside and outside the bottle, on the morning of the 23rd instant; and found the external temperature in the shade to be 59°, and the internal temperature in the shade at the same time to be 82°. On the afternoon of the same day, the thermometer inside the bottle mounted in the sun to 92°. The plants have continued ever since in the highest health and vigour, and on the day I am writing, two thirds of the seedlings are at least two inches and a half high.

"I trust that your numerous readers may derive the same advantage that I have done, from this very simple and excellent mode of raising seeds, requiring a very mild and genial atmosphere."

SOLOMON once said—"Oh! that mine enemy would write a book;" a wish of no little malice if the desire to give it a slashing criticism was parent of the wish. But that enemy would have invoked a more bitter visitation if he had replied—"Oh that Solomon in the nineteenth century of grace might have to READ all the books sent to him for criticism." However, here is heap of those we have read now before us, and as, unlike a certain prelate, we do not give an opinion upon works we have not perused, let us address ourselves to these.

MAUND'S BOTANIC GARDEN.—The re-issue of this work we hail with great satisfaction. For one shilling we now have four beautifully coloured drawings of hardy flowering plants, with full descriptions; an outline of some choice variety of fruit, with a similar narrative; two pages of a dictionary of botanical terms; twelve miniature woodcuts of every kind of plant—stove, greenhouse, and hardy—arranged *alphabetically*;—and we never saw more information gathered into a small space, yet of the readiest comprehension and easiest reference. We consider this the cheapest serial now publishing, and one of the most useful to those who delight in hardy flowers and fruits.

ELEMENTARY CATECHISMS.—These fourpenny first steps to knowledge are admirable; and an extract will give our readers the best opportunity of estimating their contents. From *Cottage Farming* we select this on "Cow-keeping:"

"Q. When may the cottage farmer who is pursuing the foregoing system, upon two acres, begin to keep a cow?—A. As soon in the spring as the cottage farmer has vetches, clover, or *Trifolium incarnatum* fit for cutting, he should provide himself with a milch cow to eat those crops while green, and thus supply almost all the manure he will require.

Q. Should the cow be constantly confined to her stall?—A. The cow should be confined to her stall, except when led out to drink and move her limbs; unless her owner have a right to graze her on some free land, in which case, no doubt, she will derive some benefit from the enjoyment of liberty throughout some hours of the day; but the cottage farmer should not turn out his cow on his own field.

Q. What green food should, in autumn, succeed the vetches and clover?—A. The leaves of cattle beet will supply the cow with food in the months of October and November.

Q. What should be her winter food?—A. Cattle beet or carrots, and some soft sweet hay, with grains and pollard, or bean meal, potatoes or Swedish turnips boiled and mixed together in a tub, with about half an ounce of salt at each meal, should be the cow's winter food.

Q. Why should not potatoes or Swedish turnips be given raw to a milch cow?—A. *Turnips of any kind are apt to give a disagreeable taste to milk and butter, and therefore are not to be recommended as food for a cow whose milk and butter are intended for the market.

Q. Does raw field beet give a bad flavour to milk and butter?—A. Raw field beet does not give any disagreeable taste to milk and butter, and it certainly adds richness to the milk. Some people scrape off the rind of the field beet, lest any of its flavour should be communicated to the milk and butter. Salt should always be given with it.

Q. Ought not, then, the cow-keeper to cultivate field beet, or cattle beet, as we also call it, in preference to turnips?—A. With suitable soil, and plenty of manure for it, the cow-keeper should decidedly prefer field beet to turnips; on indifferent soil, turnips, however, yield much greater weight.

Q. What weight of produce ought a well-cultivated rood of field beet to yield, in a good loamy soil?—A. A rood of field beet, not transplanted but sown, and well-managed in every respect, ought to produce four or five tons' weight, besides sixty or seventy bushel baskets of beet leaves, calculating the rows to be two feet apart, and the plants eighteen inches from each other in the rows.

Q. What quantity of beet per day should be given to a cow?—A. Three stones (of 14 lbs.) of cattle beet will give three sufficient feeds per day to a cow, giving milk; when dry, she should not get any roots, lest she should become fat; hay alone will then sustain her body in good condition, for the secretion of milk; grains, bran, and mashes of all kinds, are only fit for a cow while giving milk.

Q. If a rood produces, as we have calculated, four or five tons' weight of cattle beet, and the cow consumes, on an average, 42 lbs. per day,—during how many days will the beet serve for her food,—with hay of course?—A. A rood of beet, under the circumstances supposed, would maintain a cow during from 213 to 270 days: a rood would be sufficient for two cows during half the year, with other roots occasionally given for a change of diet, which is a very necessary thing to be attended to. Cows, like human creatures, relish a change of diet, and milch cows require it.

Q. Are not the leaves of field beet also very good for cows?—A. The leaves of field beet are very good for cows, if given to them quite green and fresh.

Q. May the leaves be stripped off while the plants are growing?—A. No: until the plants have entirely ceased growing no leaves should be stripped off, except as they begin to droop. Their drooping is a sure sign that they are no longer servicable to the plant, and may be removed from it.

Q. Is the culture of field beet simple and easy?—A. The culture of field beet is as simple as that of Swedish turnips, and may be considered in the cottager's case as exactly the same. After the land has been thoroughly worked, open drills 26 inches apart; fill them with short dung, and cover it; roll, or with the spade level the ridges; make holes not more than an inch deep, 12 inches apart; drop three or four seeds into them, and cover them with the finger.

Q. What after culture is necessary?—A. When the plants are the size of a man's little finger, the supernumerary ones should be drawn out so carefully as not to injure the roots of the remaining plants. Weeding and hoeing should be attended to for the remainder of the season.

Q. How much seed is enough for a rood?—A. Half a pound is enough for a rood: in dry weather the soaking of the seed for twenty hours in tepid water will quicken its germination. The soundness of the seed, too, will be tested by this process.

Q. Should food be given to cows in large or small quantities at a time?—A. Food should be given to a cow in moderate quantities at a time, so that she may have leisure to chew the cud, digest her food, and eat again with appetite.

Q. Will not a cow sometimes go dry three or four months before calving?—A. Yes; but a cow which goes dry three or four months before calving ought to be sold off as unprofitable.

* A little nitre put into the pail into which the milk is to be drawn, or into the churn with the cream, will, in a great measure, dissipate the unpleasant flavour given to milk and butter by raw turnips, cabbages, and potatoes.

Q. Will it be prudent for the owner of one cow to rear her calf?—*A.* A person who has but one cow will act imprudently in rearing her calf, unless it be of a very valuable breed, or he can spare the milk which it will require. If he rears a calf, it should be one worth rearing.

Q. What is the most approved method of rearing a calf?—*A.* The calf should be removed altogether from its mother after it has sucked the disturbed milk, which acts as a wholesome medicine to the calf, while it also relieves the mother; it should get about two quarts of *new* milk each day during the first week, four quarts the second, eight quarts the third. Afterwards, three pints of oatmeal gruel should be put into hot skim-milk, to make it milk-warm; any sort of milk may be given the fifth week, and if a little linseed or oil-cake be added the increased vigour of the calf will repay the expense.

Q. Proceed.—*A.* An ill-fed calf will never make a fine beast, however well fed it may be when grown up. After five or six weeks, water may be mixed with milk, and the porridge left off gradually, and at fourteen weeks the calf will be weaned, and able to feed on bran, tender grass, &c. A handful of fresh hay or grass hung up by a string a little higher than the calf's head is perhaps one of the quickest methods of teaching it to eat.

Q. Why should not a calf be allowed to suck its mother?—*A.* It is difficult to wean a calf which has often sucked its mother, and a cow feels so restless when her calf is taken from her, that it becomes difficult to milk her by hand; besides, a calf may suck more than enough when allowed to help itself without measure. By giving the above quantities, a calf of average size gets milk enough for its nourishment, and sufficient is left for family use."

FLOWERS AND THEIR POETRY. By Dr. Bushnan. This is one of the few books one has the pleasure of meeting with in which everything is elegant and appropriate. The poetry, the illustrations, the printing, and the binding are all indicative of good taste—all perfect in their way. It is a book that no one can take up without gratification; and we could, without a shade of weariness, take each poem on its pages successively as a theme, and carol over it until sundown. It is a gem of a book, and if we dare spare time and space, we would give Dr. Bushnan's own *Birth of the Flowers*, verse by verse, with a note upon each; but we must rest satisfied with a shorter one, by "Delta," and we assure our readers there are few less excellent in this volume all Flowers.

LILIES.

[WRITTEN UNDER A DRAWING OF A BUNCH OF THESE FLOWERS (BY A DECEASED SISTER) IN THE ALBUM OF LADY L. L.]

"Look to the Lilies how they grow!"

'Twas thus the Saviour said, that we,
Even in the simplest flowers that blow,
God's ever watchful care might see.

Yes! nought escapes the guardian eye—
However vast, however small—
Of Him who lists the raven's cry,
And marks from Heaven the sparrow's fall.

Why mourn we, then, for those we love,
As if all hope was left away?
Let not our sorrowing hearts refuse
Meekly to bend and to obey.

Shall He, who paints the Lily's leaf,
Who gives the Rose its scented breath,
Love all his works, except the chief,
And leave his image, Man, to death?

No! other hearts and hopes be ours,
And to our souls let Faith be given,
To feel our lost friends only flowers,
Transplanted from this world to Heaven.

In common with several of our contemporaries, we observed and expressed our regret that *Mr. Alexander Forsyth* had left the service of the Earl of Shrewsbury, at Alton Towers, and that despite his known abilities as a gardener, he could obtain no adequate engagement. We are right glad to find that our sympathy was uncalled for, inasmuch, as that we see he has communicated a paper to the recent number of the *Horticultural*

Society's Journal, and a correspondent informs us, that *Mr. Forsyth* went direct from Alton Towers, to his present engagement as head gardener to *Mr. Brunel*, at St. Mary's Church, Torquay, where a new residence is erecting from a design by *Mr. Burns*, and the garden and arboretum are being laid out by *Mr. Nesfield*.

GARDENING GOSSIP.

A WIDELY spreading notion that *Pansies* should be exhibited in pots has given rise to a stir among the growers for sale. It is the general opinion that the buyers would be more satisfied at seeing the habits of the plant, and the manner in which the blooms grow, than they are at seeing the flowers, as it were, constrained to a flat form by the mode of placing them in their respective holes on a board. Again, it would make a more decided feature in an exhibition to require twelve plants in bloom, than thirty-six flowers on a stand; besides which, it should be required that not less than a given number of flowers should be open on a plant. It is quite certain that by such a regulation many new crumpled and uncertain varieties, which now teem from the hands of the dealers, would be condemned at once.

The Pansy, like the Verbena, depends greatly, for its real value, on the habit of the plant, whether grown in beds or borders; abundant bloom, compact growth, and rich foliage are essential, but ordinary exhibitors, who sacrifice all kind of neatness in their gardens for the sake of torturing flowers into a condition for cutting, will naturally object to a plan of showing, which will oblige them to cultivate plants as they ought to be grown, instead of spending all their efforts on individual flowers. We confess that with all our ambition to show, we would no more encumber our garden with shades and props, and tables covered with pots, than we would turn in a half a dozen pigs. We remember to have visited a garden once the day before a show, when the lady of the house observed, that we should find it more like a china-shop or a glass-warehouse than a garden, and so it was; dozens of finger-glasses, basins, and other domestic articles were covered over flowers intended for cutting the next day, and all manner of contrivances to prop and fasten blooms destined for the show; plants were reduced to skeletons to throw all their strength into one portion, and no bear-garden could look more confused, littery, and ruinous. As to a garden, it was unworthy of the name. Gardening must be corrected somehow; for in these matters it is going mad. The more public societies insist on showing in pots the better; for cut flowers deceive everybody but real florists, and those also, unless the show be exclusively for the floral object whatever it may be.

The *Botanic Gardens at Chelsea*, which we had not visited for some time, and which were in a deplorable state when we were there last, has been so greatly improved under the curatorship of *Mr. Moore*, that they remind us of the change made at Kew. Two new ridge-roofed houses, one a stove and one a greenhouse, are great improvements, and the plants in all the houses remarkably healthy.

The Society is rich in aloes, and all medicinal plants, but all out-of-door vegetation sadly feels the effect of the smoky atmosphere and dry situation. The remains of the two Cedars which mark the site of this garden, and are seen afar off, appear to grow less every year, and some of the old specimens are splendid ruins; but in all that can be improved by careful culture we are glad to recognise the change.

There is a talk of establishing an *Amateur Florists Society* for mutual protection, to which, of course, no

dealer is to be admitted, and the proposed rules have been sent to one party whose opinion is considered weighty, if not decisive. It is far from a London affair, and originates in the north.

Complaints are made by several growers of certain nurserymen monopolizing everything, and giving others no chance. It must, however, be admitted, that some of even the greatest buyers, if they do pick up a good thing, very considerably buy the good-for-nothing also. Those who have only one flower, and that a good one, are to be envied.

NEW PLANTS.

THEIR PORTRAITS AND BIOGRAPHIES.



DARK YELLOW CINQUEFOIL (*Potentilla ochreata*), *Paxton's Flower Garden*, i., 143. The name of this extensive genus is a diminutive of *potens*, powerful, alluding to a supposed fever-subduing quality inherent in some of the wild species, and particularly in *Potentilla reptans*. The name originated with the great Linnæus; but other genera have been founded by Tournefort and other botanists out of some of the species of *Potentilla*, which now stand as synonymes to it.

The *Potentilla* heads a group of very natural genera belonging to the *Roseworts* (Rosaceæ), of which the Strawberry is the next best known instance to most of our readers. In the Linnæan classification the *Potentillas* are found in the twelfth class *Icosandria*, and its third order *Trigynia*.

Potentilla ocherata is a dwarf, hairy, hardy bush, which flowered last September in the Dublin Botanic Gardens at Glasnevin. It is a native of the Himalaya Mountains, where it was found near Sermore by Captain Gerard. The *leaflets* are partly placed together like the fingers of the human hand, and partly arranged like those of the Labernum (pinnate); they are grey, oblong, rolled back at the edge, wrinkled, and whitish and hairy beneath; some are two-lobed. The *flowers* are dark yellow, at the ends of the slender spreading *branches*, very short stalked, calyxed, each sepal or division of which is yellow inside; the petals are circular.

Dr. Lindley gives the following good distinctive characters of the truly shrubby *Potentils* :—

FLOWERS YELLOW. *Potentilla fruticosa* (Shrubby P.). Bracts five, narrow, smooth on the keel, longer than the sepals. Leaflets five, narrow spear-headed. *Potentilla arbuscula* (Bushy P.). Bracts ten, as long as the sepals. *Potentilla ochreata* (Dark yellow P.). Bracts five, rough on the keel, long as the sepals; leaflets oblong, 5 to 9, much wrinkled beneath.

FLOWERS WHITE. *Potentilla Salesorii* (Salesoff's P.). An erect bush; leaves hoary beneath, and saw edged.

Potentilla glabra (Smooth P.). Bush half-trailing; leaves smooth, and entire edged.

Of *Roseworts* it may be observed, that no deleterious quality has yet been detected in any of them. For the decoration of the long "herbaceous borders" peculiar to the kitchen garden of the last century, a few of the wild *potentillas* might have been seen, chiefly small herbs from Siberia and Switzerland, and in those days no flower-border was thought complete without the only two shrubby or woody species known in the genus, *Potentilla floribunda* and *fruticosa*. About six or seven-and-twenty years back, a few *potentillas*, from the mountain ranges of Nepaul, in the East Indies, were introduced to our gardens, such as *formosa*, *splendens*, *atrosanguinea*; particularly the latter. The great demand for these "new *potentillas*" caused a greater attention being paid to the rearing of seedlings from them by the trade, and in the short space of four years, whether by accident or some natural process, *atrosanguinea* "broke" into a crimson scarlet seedling, called *Russelliana*, after Mr. Russell, who, also, originated the fine spotted crimson *Rhododendron Russelliana*. From this fortunate circumstance may be traced the biographies of "the trade's" if not of "the florists'" *potentillas*, which have increased in numbers so much that the older kinds are now all but forgotten, and the new race have recently been admitted into the good graces of Mr. Glenny, the great authority in our country for all and everything which delights a florist. The profound mysteries of the man of shapes and circles are but play things in the hands of Mr. Glenny, and, in accepting the *Potentillas* under his guardianship, he has launched forth his whole energy, in a playful style showing up the best of the new seedlings, the surer ones to obtain still more progress from the soil they do best in, and all the "properties" which he thinks requisite for a "man of taste" to recognise or fraternise in these sprightly flowers, and other things which we do not pretend to understand; but the whole may be seen in the last October number of the *Gardeners' Magazine of Botany*. B. J.

THE FRUIT-GARDEN.

INSECTS.—So surely as returns the spring, so surely return those myriads of pests of the garden, known as the *green fly*, the *red spider*, the *American blight*, &c. These three may be said to be the chief enemies of the fruit-cultivator; many others there are, but his attention must at all times be firmly fixed on these.

First of all as to the Peach and Nectarine. No sooner does the young wood-bud unfold, than the *Aphis* is sure to appear; at least, we cannot remember an exception. Indeed, in most cases, they are keenly at work before a leaf can be fairly seen; and great is the devastation they most frequently commit before the cultivator is aware. And we are sorry to be compelled to aver, that one half of our practical gardeners suffer themselves to be caught napping on this very point. By far too many wait until the ravages are manifest before they assign any importance to the little rascals, but of all the gardening follies this is one of the greatest; the mischief committed by the time their ravages are fairly perceptible is enormous, and we had almost said irremediable. No wonder that so many huge peach-trees are still to be met with, even in gardens of high pretensions, with their foliage in detached groups, or with merely a tuft of leaves and fruit at their extremities.

Now it is somewhat singular, that the *Aphis* always seems to attack most severely the *lower* parts of the tree, or rather those back shoots which we have, in our pruning and disbudding articles, characterized as a nursery from which the fabric of the tree may be repaired. It is not very plain why this should be the case (unless it be that such are generally more snugly situated and sheltered), but so it is, and the loss of these as surely lays the foundation for naked and barren limbs in successive years.

We are not aware that there is anything in use superior to tobacco-water: this we know to be perfectly effectual, without the slightest damage to the tree. It has been said—"There is a time for everything," and so indeed it is with this application. It so happens that the appearance of the Aphides is about coeval with the development of the blossoms; and it becomes a nice point so to apply the tobacco-liquid, as by no means to paralyse those delicate organs, the stamens and pistils, on which we depend for the ensuing crop. We never did apply it whilst they were performing their office, and we dare not recommend such application. Immediately, however, such period has passed, we say, apply it without delay, for in another ten days or so, the embryo fruits will be bursting their decaying vegetable cements; and the tender skin of the young peach or nectarine appears ill-adapted to endure so foul an application as the tobacco-liquid.

The lapse of time, then, between the casting of the corolla or decaying blossoms, and the bursting of the decaying calyx, for the unfolding of the fructiferous germ, is, as we think, of all others the most eligible for this application; and it has the advantage of coming in a preventive, rather than a remedial form. Such, at least, has been our practice for many years, and the amount of success which has accompanied it, warrants us in recommending it with the utmost confidence. This thing, however, must not be done by halves; one hurried dash with the syringe will not effect the utter extermination of the aphides: which is the point to be aimed at; and let no man shoot one inch lower who would boast of a noble peach wall.

It has been repeatedly stated in these columns, that two doses have always been found necessary to the sure extirpation of these pests; but as THE COTTAGE GARDENER possesses such an amount of elasticity, that it is constantly stretching itself, and that, too, much amongst the rising generation, we feel bound to give the details of such important processes over again occasionally. Our practice is to brew from ordinary tobacco-paper, at the rate of two pounds to a gallon. This mixture ought to be of double strength, for a pound to a gallon used to be the ordinary quantum; but this "paper" has become so adulterated that it is doubtful whether using Shag tobacco is not the most economical—two pounds to a gallon—than of the tobacco-paper; and to one gallon of this we add nearly three of ordinary soap-suds, and generally also a quart of water in which four ounces of strong Shag tobacco has been soaked. If the soap-suds are *very strong*, it will be well to use only half the quantity, adding water instead of the residue. If Shag tobacco is used alone, six ounces, with the addition of soap-suds, should make an efficient mixture. The tobacco, or the paper, must have its strength extracted by pouring boiling water on it, and allowing it to stand in a vessel until cold; and it must be kept closely covered to prevent evaporation. The liquor is then strained through a cloth, or fine sieve, and the material must be squeezed and wrung, in order to extract the whole of its qualities. We always brew the mixture a day or two previous to use, and try a little a night beforehand, in order to be sure that it will kill the Aphides without injuring the trees.

It is important that a fine afternoon be chosen for the operation; for rain would wash away many of the qualities. If, therefore, the second afternoon should turn out foul, we delay it another day. The wall is syringed regularly through, from one end, and we return from the contrary end back again slightly, in order to search any portions that may have been missed; and we do the same on the second application. The application is made at about five p.m., and as we have canvass, we immediately let down the covering for the night. By these means we receive no farther molestation from the

Aphides; and this has been our practice for some fifteen years at least. The peach and nectarine wall here is 240 feet in length, and it requires about eight to ten pounds of tobacco paper to complete the whole.

It is not, however, the Peach and Nectarines only which are liable thus early to be infected; the Plums, too, sometimes early evince signs of a severe approaching attack from these insects, and when such is the case we advise the same preventive measures. We generally commence with the Plums as soon as they are out of bloom, by using soap-suds, repeating the dose at intervals; and this generally kills or drives the Aphides away. Such applications should, however, be tested beforehand; for our laundresses sometimes use strong mixtures in their washing; and although we have never ourselves suffered this way, we always feel anxious; for damage thus occurring is a very disheartening affair.

THE RED SPIDER.—About the extirpation of this insect we have already, this spring, given explicit directions as to the Peaches and Nectarines; and we may add, that we apply the same mixture to valuable Pear trees; and as our leading shoots are twelve inches apart, and the young shoots tied down thereon, the application is made with much ease.

Apple trees are sometimes much injured by the red spider; and choice kinds, in a young state, are well worth a little trouble in this respect; for we have known nice young espaliers thrown into a state of complete stagnation for want of a little assistance. Nothing is necessary but to apply the peach mixture with a brush over their branches.

THE AMERICAN BLIGHT.—This pest, too, generally shows signs of resuscitation in the middle of March, and unless means are taken without delay, trees in which it had been well-nigh extirpated will be as bad as ever in a few months. We had two men employed this very day, one on each side the tree, applying spirits of turpentine with small brushes. At this period they are mere specks, and one touch with the turpentine brush, dexterously applied, is enough in most cases. A friend of ours has recently informed us that he has used stale urine with much success; but that we have not proved, although it is a well-known cleanser of impurities connected with the bark of fruit-trees.

Whilst on the subject of insects, as connected with fruit trees, it may be well to direct attention to the scaly coccus, termed, we believe, by our entomologists, *Aspidiotus astreæformis*, or, in plain English, the pear-tree-oyster scale. We are not aware whether the coccus which attacks the apple tree is *precisely* the same, we fancy it is; of this, however, we are assured, that soft soap alone, with a good scrubbing, will extirpate it. We have kept it fairly at bay, if not extirpated it, with the soap, after the rate of four or five ounces of soap to the gallon. Some of our gardeners use very powerful mixtures for these pests, in which spirits of turpentine plays a conspicuous part; but we fear to direct our amateur performers to the use of such caustic remedies, for it is very easy to burn one's fingers. One thing may be observed, all appliances in this way should be made, if possible, during the "rest season," for then the bark of the tree is less sensitive; then there is no danger to be apprehended as to the unfolding bud, and then may a little extra strength be imparted to the mixture without danger. Nevertheless, if any one has fruit trees infested with the bark scale, and hitherto neglected, the soft soap (as before recommended) may be even now applied, with every prospect of success. Above all, let those who have fancy espaliers of choice kinds, whether wall fruits, or such things as apples, pears, or plums, take immediate care that their early spring growth is made unfettered by insects. No lasting success can ever be effected by leaving these things to chance.

R. ERRINGTON.

THE FLOWER-GARDEN.

COMPANION TO THE CALENDAR.—Some of the more pressing operations for this month I touched on last week, and now that my idea of a Companion is out, I shall begin alphabetically, and go regularly through the Calendar.

ANNUALS (tender) are the first on the list, and the tender sorts for the flower-garden are chiefly half-hardy; such as the different *Lobelias*, *Mesembryanthemums*, *Phlox Drummondii*, *Portulaccas*, *Salpiglossis*, and others of that stamp, and all of these that were sown in February and March ought now to be fit for pricking out into other pots to be still kept in a warm bed till they take a good hold of the fresh soil, when they will be fit to be removed to a cool place to harden them off in time to be ready to transplant into the borders or beds. *Pricking out* is the florist's name for a change from the seed-pot to the nursing-pot. No matter how many or how few seedling plants of any kind we may have to prick out, the most economical way is to put four, five, or six of them into a 3-inch pot, to save room, which is always more scarce in April than at any other time. Four seedlings is the right number; but to make sure I say five or six, and, if they all live, four of the best of them will be ready for a pot each at the beginning of May. At that time, by quartering the ball, each little plant has a sufficient quantity of soil to carry it on for the next stage. Every one of us knows by this time that I make strong objections to *balls* at planting out time, and in this way of pricking out and quartering we lay a foundation against the ball system. The best gardeners and nurserymen adopt the plan with their more delicate stock, such as *Heaths*, from cuttings or seeds, which take two or three seasons before they are fit for sale; while such things as *Verbenas*, which come to a marketable size in a few weeks, are potted singly from the beginning; not that single potting is the best system, but because, for them, it is the most convenient. So that, in learning things from the practice of the best growers, we may be led into mistakes, and I hold it to be bad practice to put *flower-garden* plants from the cutting or seed-pot into single pots at all, and I should consider it a fortunate circumstance if every kind reared from cuttings since last July could be had, four in a pot at planting out time, when, by quartering the ball, the plants would have enough of soil about their roots, and there would be no need of shaking part of a ball off, to loosen the roots so as to enable them to take to the soil in the bed at once. That is the philosophy of pricking out and quartering. At the next stage, that is, when the little seedlings require more room, I would not pot one of them if I could help it. I would rather plant them in temporary beds, made of a few inches deep of light compost, in imitation of planting in the open beds; only that I would plant them as thickly as the quarter ball would allow. In three weeks the roots would so spread about that one might get a good deal more soil attached to them than would be equivalent to a ball from a 3-inch pot.

At the proper time for planting, finally, in the flower-garden, I would take a barrow, or a basket, or a sieve, as the case might require, and with a trowel would lift them plant after plant, allowing as much soil to follow the roots as they would carry, and in that excellent condition they could not fail to do well. Besides the pleasure of knowing that one was in the best path, there is a great economy of time, pots, and room in this system—three things that are always scarce about all gardens by the end of April. When an exception to the rule occurs, the next best plan is to put two seedlings, or two rooted cuttings, into one small pot directly opposite each other, so to remain till the time of planting out finally in the beds or borders, and then either to make two halves of the ball, putting in each plant separately,

or merely splitting down the ball nearly to the bottom, and planting the two occupants together, and then training them down to the soil right and left. By this splitting you get some loose soil in between the parts, into which the roots will work much sooner than they will do from the outside of the ball parts. Planting whole balls, under any circumstances, is the very worst practice in gardening. I have seen so much mischief resulting from it that it makes me shudder even to think about it, and to enforce my objection I shall repeat what, I think, I once told in these pages. A few years since I went, late in the evening, with one of the best London growers to look at a long border of choice novelties, planted with balls some weeks previously. The border had been well watered with a rose pot an hour or two before, and had I not been interested to mark some plants, which I wished to purchase, the whole might be passed as in a flourishing condition; but the first which I examined did not come up to my idea of a bedder at all, and I was told it was “a miffy dog;” and well it might. The border was fresh dug at the time of planting, all the plants were put in with the balls entire, and by the time of the visit, what with the watering and the settling of the soil, the top of most of the balls were above the general surface of the border; the sun and air baked the exposed surface of the balls, so that the water could not enter them, and there they were, as dry as Scotch snuff, the plants half dying in the midst of plenty; and I am afraid the poor fellow who planted this border ran a hard chance of going without his dinner next week. But our chance visit saved half of the plants from actual destruction; at any rate, the master said he would have every one of them taken up next morning, the dry stuff shaken away from the roots, and then replanted in the same places, and well watered.

BOX-EDGINGS come next in the Calendar. I never could make out how it is that in England nine persons out of ten plant box-edgings with rooted plants, while in Scotland not one in a hundred ever thinks of such a thing. There they prefer slips without roots. At Beaufort Castle, beyond Inverness, where I first learned to plant box-edgings, I have seen miles of it put in without a single root, and not a sprig failed. I have there sat for weeks together cutting off the tops of strong-rooted dwarf box, with a chopper on a block, and then trimmed it for planting; and that was the regular practice all round that part of the country, and is so yet for aught I know. It was the same in Morayshire, and round by Aberdeen to Perth and Edinburgh, and in some nurseries I have seen them cutting down box-edgings close to the ground to get slips for propagation, and letting the roots throw up a fresh crop to be dealt with after the same manner in three years afterwards. In several parts of England I have planted it just in the same way, and with the same result; and I firmly believe there is not the least advantage in planting dwarf box with roots to it. I have seen it thus planted every month in the year with almost equal success; but, I believe, October is the best month to plant it; but roots or no roots, it may be planted now and up to the middle of May.

BIENNIALS come next, but out of the A B C order. From the middle to the end of April; again in July, and also in February, we sow biennials, according to the kinds and the season we want them to flower; but I cannot spare room to say more of them just now.

BULBS done flowering in glasses, &c., I shall leave for Mr. Fish.

CARNATIONS, CLOVES, and PINKS.—I was never a florist, and I fear never shall be one, but these plants are so very useful for cut flowers, and every one likes them that way, that we grow them extensively in the reserve garden, but never in the flower garden, where the best of them are no better than the *Nemophilas*, as far as a long season of bloom is concerned. Yet, where

a blank bed is no eyesore, what is handsomer than a bed of gay *Picotees*, or sweeter than one of dark or white *Cloves*? I never heard if those new perpetual carnations, which Messrs Knight and Perry have on sale, would last out a summer in bloom in a bed. If they do, they would be invaluable. Among other ways we leave a quantity of layers of this tribe on the old plants or stools all the winter, for planting out now and to the end of the month, and that prolongs their flowering season, as they cannot bloom so early as layers from the same stools taken off and planted last September; and, for any one having a slight hotbed to root them in, this is an excellent time to put in cuttings of them for early flowering next year, or for forcing; and in a warm rainy autumn I have seen plants thus reared come up into fine bloom through June and July, but much depends on the season, and probably on the locality. I am quite certain that cuttings now from strong grass (of the carnation, &c.) in the open borders, make forcing plants better than cuttings taken from those forced this winter, and I could tell the reason if I had room; as it is, I see I shall not be able to say half of what I intended for my specimen Companion to the Calendar.

CLIMBING PLANTS train and regulate. Nine-tenths of our hardy climbers produce their flowers on the wood made the same season. Then to "regulate" them means that the pruning is done properly, or according to their natural habits, so as to assist nature for producing a certain amount of bloom. As a general rule in pruning climbers, all the very weak shoots ought to be cut out altogether; also the very old branches that have borne spur shoots that are now next to useless through age, and to lay in healthy shoots made the last season, or the one before that. But in the absence of either, a very old branch had better remain for another season; but see that the best young shoot near to it at the bottom is cut down to a couple of buds, so that one of them may grow strong this season, and be ready at the next pruning to take the place of the worn out one. Always make provision for keeping climbers in young healthy wood, and not too crowded with weak and useless spray. As to training, pliant shoots will turn any way you wish them to fill up the allotted space.

DAHLIAS plant to remain b.; that means that old roots are to be planted, if the ground is ready for them, at the beginning of the month, where they are to flower, and it is just as safe to do so as to plant potatoes; any time this month will do when the ground is dry. When we want to increase a particular dahlia of which we have a root or two, the simplest way is to plant the root in a warm corner out of doors, early in April, and to take it up again at the beginning of May, when every eye or bud on it has sprouted in a natural way, and, therefore, more fit to be trusted again to nature for the rest of the season, than the best we can bring out by our artificial ways. Any one who can cut "sets" of potatoes for planting, may cut a dahlia root after it has sprouted; you have only to take a morsel of the old root away with the sprout, and the work is done; and if the piece is planted deep enough to keep the top of the sprout just level with the ground, it will do as well, if not better, than if potted. A May frost never hurts dahlias that are thus treated more than it does potatoes. Sometimes the tops are scorched, but that does very little damage. It is not a good plan to plant a whole root, even if you want no increase, for the plants go too much to straw from the force of such roots. Dock them well by cutting off more than one-half of the finger and toe-like tubers; but that in some heavy wet soils should be done a week before planting to allow the wound time to dry, as, otherwise, they might take the damp-rot.

HOEING and RAKING are still the standard operations. There is not one out of a thousand readers who could make out my real meaning in that short sentence. In

March I have for years recommended hoes and rakes to be locked up. I would as soon see an excited stranger with a drawn sword, as see a clever young gardener hoeing a flower-bed of mine any day during the spring; because I could run from the former; but destruction, and to a fearful extent it may be, is inevitable by the Dutch hoe fiddling among choice things just beginning to grow underground. Now after explaining all this again and again, "hoeing and raking are still the standard operations," in nine places out of ten the rake is as great a *rake* as the hoe among young beauties.

INSECTS AND GRUBS.—There is no better way of keeping the latter down than hand-picking, or placing baits for them so as to catch them at the feast in great numbers; and for early *green-fly* tobacco water is the simplest way, as the Calendar says, but strange enough the writer never uses it out of doors, but banishes all the flying creatures with *ammonia water*. This will be the seventh season in which we keep down the fly in the rosary, and all over the garden, by the garden-engine dashing clear water over them which smells badly. It is from our liquid manure tank, into which the sewage water from the mansion runs, and all the tobacco in Virginia could not answer better. This is the only instance in which we ever use clear liquid manure.

STAKES.—Our principal collection of dahlias is planted on a sloping bank behind an Italian garden, beginning with the lowest in the front row, and so on to the highest at the back or fifth row; as soon as the border is trenched in April, the stakes for the dahlias are put down as regularly as soldiers at parade. The ground is then forked to get out the foot marks, and drills are drawn between the stakes for sowing annuals, which keep the bank gay while the dahlias are growing, and for some time after they begin to bloom; but to keep the border good, one-third fresh compost is added every year.

D. BEATON.

THE ROSARY.

STOCKS FOR BUDDING.—So far as dwarf plants are concerned, many stocks may be procured in most gardens of large extent, where old perpetuals, and other free-growing and spreading roses are planted, as without any trouble of layering, suckers are often plentifully produced; and these, during the winter, or *now*, being separated, planted in nursery rows, and well-headed down, will answer well for the great majority of dwarf roses in summer. Allusion was lately made to grafting such pieces of roots, and we have grafted them, very roughly, with a fair portion of success; generally, however, fixing the scion not upon the root part, but on the young wood above it: sometimes slipping the scion in a wedge form between the cleft stock; and in other cases taking a slice off the side of the stock, and a slice off the side of the scion, tying them together, and then planting; placing the tied part and all, except a bud of the scion, underneath the soil, and doing every thing except the planting in bad weather in winter. This may still be tried, but backward or late scions must now be used. It is chiefly, therefore, for summer budding that these runners and suckers must now be sought after, especially where there are no means of getting stocks of the dog-rose from hedges, or woods, or buying them from men and boys, who get them and sell them amazingly cheap.

In all good loamy soils the dog-rose flourishes and does excellently as a stock for either dwarf or tall standards. With the exception of new stocks almost entirely in the hands of the nurserymen, the dog-rose is almost the only one we can get for tall standards. We say nothing of the beauty of such standards; they are fashionable, and with many people that is enough, however rickety they seem. In procuring them, many beginners give themselves much pains and trouble

which might be avoided: first, by cutting off all the side shoots to the desired height, leaving them as smooth as a walking stick; they will be sure to push plenty of shoots in summer, all of which must be removed, except one or two at the top. Then, again, the trouble of tracing out a length of roots is quite needless, nay injurious, as if kept they only insure an abundant supply of suckers, which are always disagreeable fellows to contend with; from six to twelve inches length of roots are quite enough, though we will not quarrel with several of them; and from these everything like incipient shoots and buds should be carefully removed before planting. Then they should not be planted shallow, but the roots should be at least six inches below the surface, for whenever dog-rose roots come very near the surface, they are so full of buds that shoots will be protruded that will rise to the surface in the shape of suckers. The soil can scarcely be too rich for this purpose, and a good mulching from rotten dung laid over them; and a watering with manure-water in May, will cause the bark to run more freely in June, and more early. If many are planted, a double rail of rods may be tied together, to which to fasten the sticks and the shoots when budded, as for want of a support many a bud is lost. Any one who wishes such stocks must procure them *now* without delay. There is a great deal of pleasure in budding. Those who care nothing for this, but love roses, had better apply to their nurserymen, who can supply them much cheaper than they can do themselves.

R. FISH.

GREENHOUSE AND WINDOW GARDENING.

PIMELEA.—This is an interesting family of plants, consisting of neat bushy undershrubs that bloom chiefly in spring and early summer. Most of them are natives of New Holland, and the neighbourhood of the Swan River.

Estimate of Species and Varieties.—The great proportion of these produce whitish flowers, arranged in close terminal heads, or corymbs, of bloom at the points of the shoots. One of the most pleasing of these is *Pimelea incana*, and that more from the singularity of its hoary stems, and its red stamens peeping through its white petals, than from anything strikingly beautiful. Another rather interesting is the *P. drupacea*, or cherry-fruited; a compact little shrub, flowering in May, and followed by black berry-like sessile fruit, which when numerous are pretty; and the plant is also among the hardiest, thriving tolerably against a warm conservative wall. The species with rose and pinkish flowers are, however, the most beautiful, and a few of these I will now mention.

P. decussata, so called because the leaves are arranged in pairs that alternately cross each other. This is, though an old, still a very useful plant; and when close and compact in its habit of growth, neither bearing the traces of neglect, nor the flat-headed rounded decrepitude-look of age, it is very beautiful when clothed with its reddish rose-coloured blooms. To keep this species compact and bushy, more fibry loam is necessary than for the most of the species. It is apt to grow too free and lanky when it has too much peat to revel in.

P. diosmaefolia (Diosma-leaved).—A pretty, compact, low shrub, growing from one to three feet in height, with rose-coloured flowers, and blooming freely in the spring and summer months.

P. hispida.—An elegant little shrub, with stiff bristly hairs; from 1½ to 3 feet in height; and having numerous bluish, red and whitish flowers.

P. sylvestris.—An elegant middle-sized shrub with bluish flowers; flowering in a cool greenhouse about Midsummer.

P. intermedia.—A pretty graceful plant, clothed generally with light pink masses of flowers; blooms in spring and summer.

P. rosea.—An elegant little bush, from 1 to 3 feet in height, and adorned with rosy red flowers.

P. rosea Hendersonii.—A superior variety to the last; the colour is much deeper and more elegant, and if any thing the habit of growth is superior.

P. spectabilis.—A most beautiful thing; mode of growth rather slender and graceful; flower-heads very large; light flesh colour, with a dash of pink when well exposed to sun and air. This species blooms beautifully in winter in a temperature of from 40° to 47° at night; and, therefore, when wanted to grace exhibition tables in May and June, it must be kept very cool and airy during the winter.

P. macrocephala.—Another large flowering sort, and somewhat similar in colour to the last; light pink; leaves large, and habit of the plant erect, growing from 3 to 4 feet in height. This is the newest, introduced by Messrs. Pince and Lucombe of Exeter, and is almost the only one of the group which, at one time or another, we have not seen. If it sustains the character given, it will be worthy of ranking with *Spectabilis* and *Hendersonii*, which previously were the two most desirable for small collections.

Propagation. By Seed.—This should be saved in the heads, without rubbing out, during the winter, unless in the case of early-flowering sorts, or such as have been slightly forwarded, so that the seeds may be ripe shortly after midsummer, in which case they may be sown at once in dampish soil in pots, and covered with a square of glass, giving but little water until the seedlings appear. As a general rule, fresh gathered seeds require less moisture in vegetating than those which, from being gathered sometime, have become more indurated. In the case of old seeds, moisture should also be given with caution, as its quick absorption, even when vitality still exists, will be too apt to end in rotteness and decay. But in general, the seeds, being kept dry in the heads all the winter, may be sown with most advantage in well drained pots, in sandy peat, in March, covered with a square of glass, and then plunged in a sweet, gentle hotbed.

By Cuttings.—If any shoots have missed having flower-heads at their points, these points will proceed to grow as the flower-buds commence to expand. In other instances, sometimes young shoots will protrude from behind the flower-heads. In either case an opportunity is afforded for obtaining a few early cuttings in March and April, the advantage of which is that the plants will be struck, potted off, and established in their pots before winter. When these young shoots are from one to two and a half inches in length, and getting just a little firm at the base, is the best time for taking them off, and inserting them in the cutting-pots. When cuttings cannot be got by either of these means, we must wait until the beauty of the flowers is gone, then cut them all neatly off, give any little pruning that is necessary to regulate shape and outline, as the two-year-old wood will generally break freely enough, and then wait until young shoots are formed, when as many may be thinned out as will be requisite for cuttings. Cuttings from older wood will strike; but then they require much longer time, are not so certain, and after all seldom give such healthy free growing plants. In preparing the cutting-pots, let them be three-fourths filled with drainage, or place a smaller pot topsy-turvy inside of a larger one, and fill the space between to a similar height with drainage, then strew a little green moss to keep the drainage clear, over that some lumpy fibry peat, over that finer sandy peat, and over all, from a quarter to half an inch of pure sand. If below this sand, or even blended with it, unless at the very surface, there is a little fine pounded

clean charcoal, but not mere dust, that being separated by a very fine sieve, the cuttings will strike all the sooner, and be less liable to damp off. The pots should be well watered, and the pots allowed to drain before inserting the cuttings, the making of which consists in removing a few of the lower leaves, and cutting clean across with a sharp knife, and then the small holes made by the dibber should be filled with sand, and all gently settled with fresh watering, and the cuttings and surface sand allowed to get dry before the conical-headed bell-glasses are firmly fixed over them. They may then be placed in a close frame or pit, about eighteen inches from the sashes, in April, and two feet in May; and in such a position they will require little shading, and but little watering, until they are struck. As soon as that has taken place, the plants must be elevated nearer the glass, the bell-glass removed by degrees, taking it off first at night, then mornings and afternoons, and ultimately altogether. In the case of cuttings struck with so little soil to feed on, and in the case of all plants raised by seed, the sooner they are pricked off the fewer will be the casualties, and the better will they thrive.

By Inarching and Grafting.—The first is seldom practised, owing to its inconvenience; the second is often resorted to, as the means of procuring a good sized plant much more quickly than from seeds or cuttings. It is of importance to have stocks of free growing kinds, such as *decussata* and *dupracea*. These should be from two to three years old from seedling or cutting. All that is necessary is to have the stock a little in advance of the scion, and then, provided you can make the inner bark of both unite, it matters little what mode be adopted; though side and slit grafting will generally be the neatest and quickest done. A few twigs may be left on the stock to draw up the sap until the scion has fairly taken. A close frame or pit will be desirable, and if a little steam from sweet dung and leaves, the union will take place all the sooner, from the excitement and moisture. April is the best time. Air must be given afterwards gradually, and the scion allowed to monopolize the whole strength of the stock. This mode is most applicable for all the low, slow growing kinds, as thus additional vigour is imparted to them.

Potting.—I have already stated that young seedlings and struck cuttings can scarcely be potted too early. It is an error, however, to suppose that each of these tiny things must have a pot to itself. Like many young animals, young plants in general flourish best in the gregarious state. However small the thumb-pot in which you pot a little seedling or cutting, it will not, without very great attention, thrive so well in such a pot as it would do in the company of two, or three, or four fixed round the sides of a 4-inch pot. This arises from the greater variation in temperature, moisture, &c., in the first cases, over what would take place in the second, and also by the greater resistance made to the expansion of roots by the side of the pot, in the latter case, which thus elicits a healthier and more robust vital action to surmount the impediment. Which child possesses the healthiest, best formed, strongest limbs? The one kept scrupulously neat and clean, and never out of a nurse's arms; or the one allowed to roll and bump and crawl upon the floor, and thus allow his joints to feel the resistance of mother earth? Undoubtedly the latter. After potting, a close atmosphere should be maintained, until growth has fairly commenced; when the plants have thus gained strength in their nursing pots, they may be shifted separately into small pots; and then, after another potting or two, they may be continued upon the regular shift system, or transferred at once to large pots upon the one shift system.

Soil.—Three-fourths of sandy fibry peat, one-fourth of fibry loam, one-fourth of silver sand, broken charcoal, and broken pots, well mixed together. All to be rough

and lumpy, but the degree to be regulated by the size of the pot, and the size of the shift, from that of small peas, to that of beans, marbles, and walnuts.

Draining must be carefully attended to.

Watering.—Clear, soft water should be used, unless when swelling their flower-buds and growth is commencing, when weak, clear manure water, from old cow dung, may be given for a few weeks. If other dung is substituted it should be of a cool nature. During winter the water should be warmer than the medium temperature.

Heat.—The whole of the genus may be kept in winter at a medium artificial heat of 40°, suffering neither for a short sinking or rising of 5°, with an allowance of 10°, and 15° for sun-heat, and the admission then of as much air as can safely be given. In the height of the summer, a cool, shady place will be the best; but they must have unimpeded sunshine in autumn to ripen the wood.

Position.—As much light as possible in winter and spring, before blooming; shaded, and cool then; close and warm, when making fresh wood; a cold pit, kept close after May, will be the thing; or a close, shady corner in the greenhouse the substitute; expose by degrees to sun and air, if very bright in the end of July and beginning of August; shade again for a little, and expose fully in autumn, protecting the pot from hot sunshine; and house before there is danger from frost and cold autumn rains. If wanted, a temperature of from 45° to 50° artificial heat will bring the most of them into bloom early in spring; but if they have not plenty of light and air along with that temperature, the plants will become thin, and the blooms be deficient in colour.

Insects.—The plants are chiefly annoyed by a white scale, the red spider, and sometimes by the green fly. For the first, dip in a solution of gum water, or one of clay and mud will do as well, allow the plants to remain in a shady place twenty-four hours, rub off the adhering matter when dry with a brush, and then well syringe, the plant being laid on its broadside; for the second, syringe, and heat some flowers of sulphur on a hot water plate; and for the third, fumigate with a little tobacco.

R. FISH.

HOTHOUSE DEPARTMENT.

EXOTIC STOVE PLANTS.

STOVE ANNUALS.—Some inquiries having been made as to the best way of cultivating *Balsams* and *Cockscombs*, I shall devote my paper this week to the culture of stove annuals, the class to which they belong, as this is the season for sowing them. There are several species that are very ornamental, and serve to fill up and keep the stove elegantly gay through the summer months.

THE BALSAM (*Impatiens hortensis*); East Indies.—This handsome annual was introduced so long since as 1596, and when well grown few plants are more beautiful.

Culture.—*Soil.*—As it is a gross feeder it requires a very rich soil; take of turf, from a good pasture field, three or four inches thick, laid up on a heap for twelve months; and turned over frequently during that time—one barrowful; add to it another barrowful of well decomposed sheep's dung, or, if that cannot be had, the same quantity of well broken down hotbed manure. Mix these well together in a moderately dry state, to be used as rough as possible; if the mixture is made two or three months before wanted, and turned over two or three times during that time, the better will they be incorporated. A little leaf-mould would be a beneficial addition, but this may be applied at the time of potting.

Raising the Plants.—Sow the seeds about this time in some of the compost sifted, drain the pots (5½ inches wide); fill the pots nearly, level the soil, pressing it down gently, then sow the seed rather thinly, cover it with

fine soil a quarter of an inch, giving a gentle watering, and place the pots in a well-tempered hotbed close to the glass. If cucumbers are cultivated, a place in their frame will answer admirably. The seeds quickly germinate in such a congenial situation. As soon as the seedlings come up, give air on all fine days to prevent their drawing up weakly. As soon as they are two inches high take them out of the frame into a warm shed, turn them out of the pots, and carefully separate them. Pot them singly into the compost, well aired, into 3-inch pots well drained. Replace them quickly into the frame, still keeping them close to the glass, but do not give any water for a day or two, because in this transition state they are very tender, and water will rot their delicate roots and the plants will perish. In the moist atmosphere of the frame they will quickly make fresh roots, and then they may be watered with water as warm as new milk. They will soon require more room, and new roots will be observed starting above the soil. As soon as the roots have reached the sides of the pots, they require repotting into 6-inch pots. Use the same compost, and place them again in the warm frame. They will now require more room and should have a frame to themselves, as they will require more air than will suit cucumbers. Water now more freely, but still carefully using tepid water. Observe the roots again, and when they reach the sides of the pots, repot for the last time into 10-inch pots. In these they will flower finely, but if very large plants are desired, they may be repotted again into 14-inch pots. When they are put into these large pots, a few green turves may be got and cut into small pieces about an inch square, place some of them amongst the compost at the bottom of the pots, upon the drainage, and a few pieces amongst it half-way up the pot around the lower part of the ball. This green fresh food well suits these gourmands. All these pottings should be finished before a single flower is allowed to bloom. The plants should then be 1½ feet through, 2 feet high, and well furnished with branches. They may now be brought into the stove and allowed to show flower.

THE COCKSCOMB (*Celosia cristata*); Asia.—This ornamental annual was introduced in 1570, and has been cultivated and improved much of late. The same culture as we have described above for the balsam suits this plant exactly, but it does not require such large pots in order to obtain large plants; pots eight inches wide will produce combs a foot wide, and four inches across. The plants must be kept near to the glass, and have plenty of air given when they have attained a moderate size. It is desirable before they become too large to allow the blooms to appear; the great object being to throw the whole power of growth into causing the combs to become large upon small plants. As the same treatment, or nearly so, suits the cockscomb as well as the balsam, they may be grown together in the same frame till they are fit to remove into the stove.

Save the seeds from the most double balsams, and the largest and finest coloured cockscombs. The balsam seed should be kept two or three years, for the older it is the more double the flowers will come, that is, so long as it will germinate.

IPOMEA QUAMOCLIT; East Indies.—A more elegant climbing plant, when well grown, can scarcely be conceived, yet it is not grown so much as it deserves. The leaves are beautifully pinnated. The flowers are like small scarlet trumpets, and are very beautiful. We trust all our stove-plant-growing readers will procure a sixpenny packet and try it; we pledge our word it will please them.

Culture.—*Soil.*—Light turfy loam, fine sandy peat, and well decomposed leaf-mould, in equal parts, made very sandy with pure white sand, for the roots are very

delicate, and require a light porous compost that will allow the water to pass through it readily.

Raising the Plants—Fill as many pots, 3½ inches wide, as the number of plants required; drain them well; sow three or four seeds in each pot, place them in a hotbed, giving a little tepid water. They will soon come up, and should have then a little air given. As soon as the roots reach the sides of the pots, repot them into 5½ inch pots, and then place some kind of a trellis to train them to. As they are twining plants, a circular pillar-shaped trellis shows them off to the greatest advantage. And now appears the reason for having three or four plants in each pot. Each plant should have its leading shoot brought to one of the uprights of the circular trellis, tied to it, and then allowed to twine itself upwards. These plants will not bear large pots, hence it is necessary to keep them in small ones. In order to allow a large trellis, plunge the pot containing the plant into one large enough to allow the trellis to be fastened within it. The material to plunge the pots in should be very open; a sandy gravel will answer very well. As the shoots spring forth from the bottom, train them to each upright till all are furnished. They will, before the summer is over, meet at the top of the trellis, and produce abundance of flowers. They will produce seed plentifully, which should be gathered as soon as the seed vessels turn brown, and be kept in a dry place till spring.

IPOMEA RUBRA-CERULEA (Red and blue I.); Mexico. 1830.—A stove climber of great beauty. It is, when first open, of the richest ultramarine blue, afterwards changing to red. Each flower measures from four to five inches across. They are in form of a goblet with the edges expanded, and are produced numerously when the plants have become large.

Culture.—*Soil.*—Loam, peat, and leaf-mould, with a due portion of sand, forms a good compost for this plant.

Raising the Plant.—Sow in a hotbed the last week in March, or the first week in April. Sow thickly in a shallow pot. As soon as the plants are up, and whilst yet in the seed-leaf, transplant them singly into 3½-inch pots; replace them in a hotbed; give a gentle watering, and shade from bright sun. When they have filled the pots with roots, give them another shift into larger pots, and remove them into the stove. Place a stick to each plant, two or three feet long. This being a twining plant it will soon wrap its shoots round the support, and will not need any tying. By the time they have reached the top of the stick, they should be potted, for the last time, into 11-inch pots, and should then be stopped at the extremity of the shoots. This will strengthen them, and cause a number of other shoots to start from the lower part of each plant. They should now have a situation assigned to them where they will have plenty of room to grow. Either train them to the rafters of the house, or make a large upright trellis of any shape the cultivator may fancy. They will soon show flower, and by the middle of July be one mass of floral beauty.

THE EGG PLANT (*Solanum ovigerum*).—There are four varieties of this handsome Arabian plant, viz., the violet-coloured, the white, the purple, and the yellow; varieties known from each other only by the colour of the fruit. The flowers are small and white, but the fruit, or seed vessel, is as large and the shape of a hen's egg; hence its name. It is used by the natives of India as an ingredient in soups, and is said to be very agreeable to the palate. In our stove they are grown, however, only for ornament.

Culture.—*Soil.*—Rich compost, made with loam and dung in equal parts, suits these plants exactly.

Sow the seeds in March in a gentle hotbed, in a shallow pot, 5½ inches wide; transplant the seedlings singly into 3½-inch pots as soon as they have four leaves, and replace them in the hotbed, shading from sun for a few

days; repot in a month's time into 5½-inch pots; and, again, in another month, into 8-inch pots. In this size they may be allowed to flower and fruit, and are then very ornamental.

T. APPLEBY.

FLORISTS' FLOWERS.

DAHLIAS.—If the plot of ground intended for dahlias is not in good order, it is high time it was. Wheel on plenty of dung; trench two spits deep, leaving the surface as rough as possible. Begin now to harden off the plants by a full exposure to the weather from morn to evening, shutting up then and covering, too, securely, for there is no knowing what a night may bring forth. Scarce kinds may still be propagated by cuttings. Seedlings, if any, should have their due share of attention. Prick them, to save room, into long narrow boxes, two rows in each; the sides of these boxes may be made to fasten to the ends with staples and hooks, so that when the frost is all gone the hooks may be undone and the sides will fall down; the young plants may then be separated, and planted without any injury. See back numbers for notices of other florists' flowers.

T. APPLEBY.

TO CORRESPONDENTS.

VINERY AND NO GREENHOUSE (R. H. D.)—Your plants will do well in such a vinery until you raise the temperature by artificial heat to 50° and above. *Geraniums* will even stand 5° more with safety; but when the temperature is above 50°, as you do not want your plants of *Geraniums*, *Fuchsias*, &c., early, they would be better as you propose, under frames in the garden. The less check and change, however, the better. If the night temperature in the vinery was from 45° to 50°, you must keep your frame rather close during the day, and cover up at night, until the plants get used to it, and the days get warmer and longer. If you do not force your vinery until February or March, you could not have a better place for wintering plants, as a temperature of 45° and less will never interfere with the vines.

NERIUM OLEANDER (Ibid.)—We have never found any difficulty in striking this either in sand or in water; try again, but do not use the shoots too young; they are apt to damp from a deficiency of solid matter.

LATHYRUS LATIFOLIUS (Ibid.)—This increases freely by dividing the roots. You cannot do it too soon, as the less growth has taken place the better.

EARLY WHITE MALTA BROCOLI—HERACLEUM GIGANTEUM.—Messrs. Hardy & Son, Nurserymen, Maldon, Essex, write to us as follows: "Seeing in your answer to T. S. G., last week, you do not know 'Early White Malta Brocoli.' We beg to inform you it is a distinct variety from Walcheren Cauliflower, or Grange's Early White, being more hardy than either. You may recommend it as a fine very early kind. The plant of *Heracleum giganteum* your Tewkesbury correspondent inquires of, will grow fine in a tub of large dimensions, with holes at the bottom, drainage, &c., but would require a rich compost and frequent copious waterings with liquid-manure. It must not, however, be expected to grow so huge a specimen as in the open ground, as it is a great feeder. It would be best to strike the plant in a pot, and finally plunge it with roots entire."

PAVIAS (J. G.)—*P. rubra* and *discolor* are the best for planting on a grass plot flanked by evergreens, but *Æsculus rubicunda* is better than either of them; indeed, the best of the whole race for the purpose you want.

PYRENEAN OAK (Ibid.)—Probably the nurserymen did not know what kind of oak you mean. It is the *Quercus Pyrenaica* of some botanists, but *Q. Tauzin*, *nigra*, and *stolonifera* of others. The seeds of Chinese *Arbor vitæ* do not ripen with us till late in the spring, and by sowing them as soon as ripe, we never missed. The seeds of *Sweet Bay* remain two years in the ground. *Kerkis* and *Cheilos* are correct.

TOM THUMB GERANIUM (Arthur Loftus)—You are quite right, one does not like to see the same things in the same beds year after year. *Petunias* would be unmanageable on your raised bed. When *Mangle's Variegated Geranium* borders a mass of scarlet, its flowers should be picked before they open, as no arrangement can be worse than pink and scarlet; the leaves of *Mangle's* give the relief, not the flowers. If you could get thirty-six plants of the *Variegated Alyssum* to form an edging next the ivy, then the whole centre might be planted with *Calceolarias*, and that is on the whole the best change we can make. *Mangle's* may be used in place of the *Alyssum* as the second best. No garden is safe where hares and rabbits get in; and if hares are pushed for food, they will jump over a wire edging two feet high, if once they get acquainted with it, so that there is no way of keeping them from the beds but by unsightly guards or exclusion from the garden. Half-hardy annuals need not be pricked into pots, but transplanted at once from the seed-beds into the flower-beds, unless they get too thick, when some of them

should be transplanted into rows or beds for nursing. Tobacco-smoke will kill the green fly but not scales; these must be washed off.

SCARLET GERANIUMS (Maria)—The rule how to treat old geraniums that have been wintered dry in a dark place, is to take them to the light and air as soon as they begin to grow in the spring; and the rule for bedding out plants of every description is, that they should be parted out of store pots in the spring, and put into single pots; now is a good time, but a fortnight earlier would have been better, provided there is room for them.

ROSES (Ibid.)—You intended to send a specimen, but forgot it. You are not too late, but you must lose no time now to prune your Bourbon roses. Instead of indulging them, as you and thousands more imagine, by not cutting them, that is the way to ruin them.

DIELYTRA SPECTABILIS.—Mr. Moore, the Curator of the Chelsea Botanic Gardens, says "the best coloured drawing of this is in *Paxton's Magazine of Botany*, xv., p. 127; and another in the *Journal of the Horticultural Society*, ii., t. 3. It is a lovely plant, and one of the greatest ornaments of the greenhouse at the present time, though I believe proved quite hardy."

CONCRETE BENEATH TREES (A Friend and Admirer)—Mr. Errington has no very pointed aversion to concrete founded on well tested principles, only he feels a jealousy lest such should have a tendency to hinder the free ascent of the natural ground heat, and the descent of water. Having accomplished everything to be desired, as far as root culture is concerned, by the use of rubbly material, which is economical and always at hand, no desire exists for far-fetched materials, or plans involving extra labour. He has used the above practice in hundreds of cases during the last twenty years, and has never been troubled with deep roots; indeed, on breaking up old foundations he seldom meets with fibres enough to sustain a young crab stock. Clean riddled cinders, however, are rammed hard all over the surface, through which the roots seldom feel disposed to penetrate. "A Friend" says he has used concrete successfully over "a cold subsoil." This throws light on the whole. Why not plant one foot or so above the ground level? "A Friend" forgets that in the act of replacing the stones with concrete he was compelled to root prune harder than ever. This is the chief reason why his trees are tamed; they are, moreover, getting older. Mr. Errington will, one day, soon, endeavour to probe this subject to the bottom in THE COTTAGE GARDENER.

VINES ACCUSTOMED TO BE FORCED (A Novice)—You are right: your vines awake at their usual period by a law of nature common to all plants, whether in-doors or out. Do not hurry them now you do not force them: do not by any means starve them, but just give them ordinary, yet comfortable treatment. In a couple of seasons they will be less excitable.

FORCING ARRANGEMENTS (A Subscriber ab initio)—"I wish to ask your advice (knowing your willingness and ability to give it). I live within a short distance of Liverpool, and it has occurred to me that I could improve my condition by growing cucumbers, &c., all the year, for in the winter they would sell extremely well. I have plenty of manure, having a farm; but I know that it is next to impossible to keep up a genial and regular heat with that material during the winter months; and what I propose to do is, to erect a set of pits, having five frames 25 ft. long by 6 ft. wide, with brick walls 2 ft. high, wood frame back 2½ ft. high, front 1½ ft. high, on each side the boiler—having one of Burbidge's boilers, which might have pipes on each side, with stop-cocks, so as to act on either division at pleasure from the boiler. I shall have three or four inch pipes with return pipes both passing under the soil, and in each frame a small upright pipe, with stop-cock to admit moisture when necessary. I have no idea what quantity of coal such a boiler would consume. Can you inform me? I can get coal in Liverpool for 6s. per ton, and slack at little more than half that price. I would build the walls half brick (4½ inches) thick, and fill them three-fourths with broken bricks and cinders, and on this lay a thin sod, grass down, and over all the proper soil. The frames might be divided into 1, 2, or 3 lights, as required. I should devote half—say five lights—to cucumbers, and the remainder to radishes, lettuces, &c., in winter, and forcing rhubarb, sea-kale, &c.; and in summer for cucumbers, melons, &c. I shall have the frames glazed with Hartley's rough plate glass, 36 by 30 inches, having the bearers 2½ feet distant; but how to make the joints in the middle tight without a lap I know not, unless it can be done with putty. I shall have ventilation at the sides. How would a vinery answer on the plan of Mr. Rivers's orchard house, with brick walls instead of wood? Would it require glass at the sides—to be heated with a boiler as above, with flow and return pipes both above ground, and the vines to be planted outside? I wonder none of your correspondents have recommended "cinders" for pot drainage, which are always come-at-able, whereas "corks" are, or ought to be, scarce. I have used cinders for many years, both for hard-wooded and succulent plants, and found them answer admirably." You are so "well up" in your points, that it is not easy to offer useful advice. Your policy seems good. Liverpool is a famous mart, and farming and gardening possess some eligibilities for playing into each other's hands, in these keen times. And now for your points *seriatim*: "All the pipes passing under the soil," do you say? Do you not provide special atmospheric heat? It is impossible to state the quantity of coal, so much depends on the period, and the objects in view. The quantity, however, with a good Burbidge, will not prove fatal to your plan; especially with coal at from 3s. to 6s. per ton. We doubt you

must use laps and putty; and pray take care to have roomy apertures for ventilation. A vinery would do on Rivers's plan, with brick walls, no doubt, and there would be no necessity for glass at the sides, provided the roof has a good pitch. The piping as you propose. Thanks about the cinders; we have often wondered too; we will point this out to our readers.

IXIAS (R. G. C.).—Either they had too much water; or the sudden change in the weather at the beginning of March affected them; or the bulbs were not ripened last year. When their leaves turn yellow, the only remedy is to give them no more water than will just keep the soil from being quite dry, and to shake the soil from the bulbs as soon as the leaves decay, and to dry the bulbs slowly where air can reach them.

GLOIRE DE ROSAMENE ROSE (Lover of Roses).—When treated for beds it comes in as a China; but it is a true hybrid Bourbon, or Bourbon only, according to the usual way of classing them. As you have Bourbons and Chinas, you can tell their differences as well as any one. *Leschenaultia*, *Correa*, and *Witsenia*, will grow from cuttings as you propose, but the *Correa* would do better grafted on *C. Alba*, and *Witsenia* takes a long time to root, while *Leschenaultia* strikes freely.

BEES (A. B.).—If you wish to put linseed oil upon the alighting board of your hives to keep it from cracking, which we think it will not effect, do it boiling hot, that it may at once be absorbed by the wood, and do it late in the evening, stopping up the mouth of the hive during the time. Oil is very annoying to bees, one drop let fall upon either a wasp or a bee kills it instantly.

BEES (R. H. S.).—You must let your bees swarm, and put the swarms into Payne's hives, and drive the bees in the bell-shaped hives into Payne's hives in August, as already directed in THE COTTAGE GARDENER. Placing Payne's hives under your stocks will not answer your purpose. If you wish not to increase your number of stocks, unite the bees from the old hives to your swarms, and take their honey.

CAMELLIAS (W. B. N.).—Yours have dropped all their flower-buds, and your gardener says it is owing to their being exposed during the autumn (in consequence of the house being under repair) to heavy rain, which "soddened" the roots with wet. This is, no doubt, the cause, if the pots have been ill-drained, and the soil heavy. It is rather late to repot them, and too late to prune; but if the pots are, as we suspect, ill-drained, and the soil heavy, it is desirable to repot them immediately. Give them a little extra heat—60° by day, and 55° by night. Keep the floor flooded with water in sunny weather, so as to create a moist atmosphere; when growing syringe gently almost every evening, and continue this liberal treatment till the flower-buds are fairly set; then set them out of doors in a place where the sun will not shine upon them after ten o'clock. Let them remain here till the middle of September, giving a due supply of water during dry weather. A good compost for *Camellias* is turfy loam and peat in equal parts. Let them be well drained with broken potsherds. Large plants will require full two inches and small ones one inch each of drainage.

DOUBLE DARK PRIMROSES (Ibid.).—These have not bloomed. They should not have been kept in pots out-of-doors through the winter. The best place for them in pots is a cold frame. But the better plan is to plant them in a light soil, under the shade of a low wall facing the east. They never do well in a greenhouse.

CAMELLIA GRAFTING (Novice).—It is too late this spring to graft your large single *Camellia*; you had better defer it till autumn. September is the right month. Graft it by approach, that is, *inarch* it. The safest way is by bringing young plants of double varieties, a branch of each, and cutting off a thin slice of wood, and another of the same size off the stock, fit them together, and tie securely with matting, or cotton, or worsted string; let them remain so tied till they are firmly united, and then separate them an inch or two below the graft. This part may be cut off after the graft begins to grow. If you have no young plants of the double varieties, you may graft by the same method, only leave the bottom part of the scion long enough to be inserted in a small phial of water tied securely to the branch of the stock; change the water often, and let it remain till the scion is fairly united. This is not so certain a method as the former.

AZALEA INDICA (Ibid.).—The small-leaved varieties will die much sooner on their own roots than if grafted on strong-growing broad-leaved variety.

YOUNG VINES (Ibid.).—These will not bear forcing the same year they are planted. Let them break without heat, and gradually grow them on; but give a little heat in August to ripen the wood.

CLIANTHUS PUNICEUS (Rhyd-y-Gors).—You have a fine luxuriant plant in a greenhouse heated from 65° to 70°, but it does not flower. The reason is, the temperature is much too high. This plant is nearly hardy, and may be grown against a south wall, where it will flower finely. The only protection it requires is a covering of double mats. In your case, give plenty of air to lower the heat of the house, and keep the plant quite cool in winter, only a degree or two above the freezing point.

SCENTED CINERARIA (L. L.).—We have made every inquiry about the plant you require, but no one seems to know it. Do any of our readers know of a "very powerful *heliotropium*-scented *Cineraria*?"

GLADIOLUSES (A. Z.).—You must excuse the delay that has occurred. We have now the opportunity, and in answer to your question, insert a list of the garden varieties of *Gladiolus*: *Amphion*—purple, crimson, white blotch, deep purple margin. 1½ ft. *Ariadne*—rosy pink, white line, crimson margin, resembling *pudibundus*. *Clotilde*—salmon pink, each petal margined with white. 1 ft. *Elegantissima*—salmon red, and white blotch. 1 ft. *Formosissima*—scarlet and white, fine. 2 ft. *Fulgida*—shaded dark red, with white blotch. 1 ft. *Gandavensis*—superb yellow and scarlet. 2 ft. *Gloria mundi*—bright scarlet, light blotch. 2 ft. *Heloise*—pale scarlet, white broad blotch. 1 ft. *Heroine*—pale scarlet, white blotch. 1½ ft. *Henrietta*—pale scarlet, large white blotch. 1 ft. *Iphigenia*—salmon pink, white blotch. 1 ft. *Inflatus blandus*—pink, light blotch. 2 ft. *Insignis*—fine scarlet, extended shaded blotch. 2½ ft. Very fine. *Jenny Lind*—pale scarlet, white blotch, very delicate. 1 ft. *Madame Sontag*—pale pink, light cream white blotch. 1 ft. *Magnificus*—salmon pink, margined with white, pale blotch. 1½ ft. *Pudibundus*—light rose, white lines. 2 ft. *Purpurea*—purplish pink, white blotch. 2 ft. *Princess Alice*—rosy pink, white line. 2 ft. *Princess*

Royal—light scarlet, light purple blotch. 1 ft. *Queen Victoria*—fine scarlet, white blotch. 2 ft. *Ramosus*—clear rose, white blotch, crimson and purple margin. 2 ft. *Rosa mundi*—crimson, scarlet. 2 ft. *Rex rubrum*—deep velvety crimson, marked with deep carmine and white. 1 ft. *Triumphans*—bright scarlet, long white stripe. 1½ ft. *Vittelinus*—bright orange, scarlet, maroon and white blotch. 1½ ft.

HIMALAYAH PUMPKIN (P. F. M.).—We have had the fruit both green mottled with white, and orange-coloured; form, always oval, flattened rather at the ends; size, about 12 inches long, and 7 inches diameter in the widest part. *Abutilon striatum* likes a rich light loam, with a little peat, and a cool greenhouse. In the south of England it survives the winter against a south wall, with a little protection over the roots in winter.

LABELS (G. P., and Peggy).—These correspondents inquire where can the labels be procured which were exhibited at the Kingsland Meeting, as mentioned by us on March 13th?

ZAUCHSNERIA CALIFORNICA, &c. (E. B.).—You can obtain the plants you name of any of the florists who advertise in our columns.

FUMIGATING WITH CAYENNE PEPPER.—A correspondent (J. B.), says—"In answer to L. R. Lucas, I beg to inform him of having fumigated my cucumber-house with cayenne pepper, which is 48 feet long, and 9 feet wide, which was very much infected with the green fly, caused by striking fuchsias in the house. I used 1½ ounces, which was most effectual, and did no injury to the cucumber plants." *Brounston Hybrid Cucumber* may be had through any seedsman advertising in our columns.

CANNA INDICA.—Mr. Waddell, of Headingley, Leeds, writes to us as follows:—"With respect to the *Canna Indica*, I beg to inform you that I grew it for several years in an open border at *Brymore, Bridgewater, Somerset*, where it flowered and ripened seeds freely in the open air, without protection, summer or winter, for some years. It may still be in the same border in front of the conservatory. I believe I left it there."

PEA FOR LATE CROPS (Cantabrigiensis).—The pea for the last sown crop to yield the same year is the *Prince Albert*, because it passes through all the stages of growth most rapidly. To come into bearing late in summer, and to continue good for table use far into the autumn, none excels the *Knight's Wrinkled Marrow*, because it is excellent when boiled long after it has attained an age when other peas would not be eatable.

PLEURONOMONIA IN COWS.—In answer to our correspondent *Isabella's* inquiry at p. 410 we have had several letters. Mr. H. Christian, Veterinary Surgeon, 54, St. George-street, Canterbury, says he has been very successful in effecting cures. A *Constant Reader* and *Homœopath* each recommend homœopathic treatment. The following treatment is quoted—"The first case I tried was a beast about three years old, the symptoms very unfavourable, and I did not see the slightest chance of recovery. I began by giving six drops of tincture of *Bryonia* in six tablespoonfuls of water, one teaspoonful every four hours, for three days, when I saw a decided improvement in the cow. I then changed the treatment to the same quantity of tincture of *Phosphorus*, for a similar period, when the improvement was still more decided. I then gave a similar quantity of Tincture of Sulphur at the same hours, and in a day or two the cow was perfectly well. In all the subsequent cases I doubled the quantity of the tinctures, after which the effect was sooner perceptible. I had six or seven cases under treatment at the same time, and all recovered; but a failure occurred shortly which I could not account for, the treatment was exactly the same, but it may not have been taken in time."

BEE-DRESS, &c. (J. H. R.).—You may write for this and the hives to J. H. Payne, Esq., Bury St. Edmunds.

WESTPHALIA HAMS (W. J. Easton).—Can any of our readers inform us for our correspondent how these are cured?

CARDOONS (T. A.).—Whatever management you may adopt for these which have survived the winter, they will be unserviceable, and will advance early to seed.

BOOK ON GARDENING (G. M. H.).—Loudon's *Encyclopædia of Gardening* embraces every department, but is expensive. The *Cottage Gardeners' Dictionary* will answer your purpose, and is cheap.

CARROT WINE (A grateful Subscriber).—This you say has not worked itself clear. Put some dissolved isinglass into it, bung it down, and leave it for six months undisturbed.

AMERICAN GARDENING (Carew S. Peckham).—Ornamental gardening is highly cultivated in the United States, as you would perceive if you read Downing's work on landscape gardening as practiced there. There are horticultural societies and shows as in this country, and their garden literature is respectable. English high-class gardeners find employment there; for we know that Mr. Reid, head gardener at Noblethorpe, left that situation for a more advantageous engagement in America. High testimonials, of course, would be of great advantage.

NAME OF PLANT (T. Sallow).—Your plant is the Green Hellebore (*Helleborus viridis*), a native of this country, though not very common. White Hellebore powder will kill the *Caterpillars*.

RAISIN WINE.—A trusty correspondent says, the following recipe has been followed in his family with the best results for about half a century: "To make a hogshead of wine, take 3 cwt. of Smyrna raisins, or 3½ cwt. Malaga, 40 gallons of soft water, put them into a tub sufficiently large to admit of the increased bulk resulting from fermentation; stir the mass well daily until it shall have fermented briskly, which in temperate weather will be in from ten to fourteen days; draw off the liquid, and press the fruit, mix all together, and tun it, leaving it in the cask without a bung for twelve months, merely covering the bung-hole with a piece of open canvass. Note. The wine made from Malaga raisins will be soonest fit for use; but it is esteemed best made 1 cwt. Smyrna and 2½ cwt. Malaga. I have never bottled until it has been three years in the cask."

THE COTTAGE GARDENER—ADVERTISEMENTS.

THE DAMPSHA MELON (vide *Gardeners' Magazine of Botany*, p. 45). This splendid Melon, the fruit of which will keep for three months after it is quite ripe, requires little heat, and will produce a heavy and fine flavoured crop. 2s 6d per packet.

CAMPANULA VIDALII, a new shrubby species from the Azores; suitable for bedding, with white flowers, and perfectly distinct. 3s 6d per packet.

DIGITALIS PURPUREA SUPERBA, or Double Foxglove, very distinct. 1s per packet.

STOCKS, six superb kinds, home saved. 2s the set.

LARKSPUR, six superb kinds, home saved. 2s the set.

CALCEOLARIA, from splendid kinds. 2s 6d per packet.

IPOMEA RUBRA CERULEA (true). 1s per packet.

BALSAM, White and Purple Camellia, very fine. 1s per packet each.

Ditto, mixed. 6d per packet.

VEGETABLE SEEDS.

SNOW'S WINTER WHITE BROCOLI, from John Snow, and warranted true. 2s per packet.

WALCHEREN CAULIFLOWER, or BROCOLI, the true dwarf. 2s per packet.

CAPE BROCOLI, very choice and superb. 1s per packet.

BROCOLIS, the eight best for succession through the season. A packet of each, including the above, 7s 6d.

BRUSSELS SPROUTS, very choice, home saved. 1s per packet.

IMPERIAL GREEN PARIS COS LETTUCE, from the Azores, grows to the weight of 5 lb.; a splendid summer kind. 1s per packet.

THE NEGRO POTATO (vide *Cottage Gardener*, p. 392).—"We know the *Negro Potato* well, and we enter fully into your pleasant remembrance of the great balls of sparkling flour, looking as if some currant juice had been thrown over them, and then been sprinkled with snow." A few bushels, in peck bags, at 2s per peck.

A fine collection of Greenhouse Plants, Heaths, Azaleas, Fancy Pelargoniums, Chrysanthemums, Bedding Plants, &c., at reasonable prices.

WM. P. AYRES, Nurseryman, &c., Blackheath, Kent.

Post-office Orders payable at Greenwich.

VALUABLE VEGETABLES.

CAULIFLOWERS.—Myatt's Improved Early. Much earlier than the old varieties, more compact, and heavier; considered by the raiser as most desirable; quantity very limited. 1s per packet.

BRUSSELS SPROUTS.—Improved variety, direct from Brussels. 1s per oz., 6d per packet.

CABBAGE.—Mitchell's Enfield. This has been tried at the Horticultural Society's Gardens, and pronounced one of the best. 1s per oz., 6d per packet.

Chappel's Colewort. Excellent for winter greens. 6d per oz.

CARROT.—St. James'. One of the best for small gardens and shallow or heavy soils. 3d per oz.

CELERY.—Coles' Superb Red. Very extensively grown last season, and pronounced first rate. 1s per oz., 6d per packet.

LETTUCE.—Victoria Cabbage. But little known, but one of the handsomest grown, and which no gentleman's garden should be without. 1s per oz., 6d per packet.

PARSLEY.—French fringed. Very handsome, much finer in appearance than the curled. 6d per packet.

DUNCAN HAIRS, in offering the above selection from his general list, begs to inform his friends that he warrants them to be as described.

109, St. Martin's Lane, Charing Cross, London.

PURVEYOR to her MAJESTY,

and the KING of the NETHERLANDS. **JOHN BAILY**, 113, Mount-street, Grosvenor-square, London, Dealer in all sorts of useful and ornamental Poultry, Wild and Tame Pheasants, Domesticated Wild Fowl, Fancy Fowls' eggs for setting. BAILY's Registered Poultry and Pheasant Fountain, to ensure a constant supply of clean water for Gallinaceous Birds, especially adapted for Chickens, Pheasants, Poults, Pigeons, &c.; by its use, many of the diseases to which these birds are subject, are avoided, as, although there is an ample supply of water, they cannot get into it. 14 quarts, 17s 6d; 7 quarts, 15s 6d; 3 quarts, 13s 6d. Particulars, with a drawing, forwarded, per post, on application.

SPLENDID FLOWER SEEDS. CLARKE and CO., Seedsmen and Florists, 86, High-street, Borough, London (near the London Bridge Railway), are very desirous of making known to the Nobility, Clergy, Gentry, and the readers in general of *THE COTTAGE GARDENER*, their first-rate and really beautiful Flower Seeds, and call especial attention to the German Imported Sorts, more particularly the Stocks, Asters, Double Wallflowers, Larkspurs, Balsams, Picotees, Carnations, &c., &c., the superiority of which gave very great satisfaction last season, and **CLARKE and CO.** beg to assure the public they will send out the same qualities this season, at the following prices per packet:—

ASTERS.—Quilled Double German, mixed, 6d. Ditto do. 12 sorts, separate, 2s the collection. Globe Flowered German, 6d. Tall Quilled German, 20 colours, mixed, 6d.

AURICULA, from Stage Flowers, 6d.

ANTIRRHINUM, Fowle's varieties, mixed, 3d.

BALSAM, the largest Giant, 6d. Double Dwarf Camellia, 6d.

BRACHYCOMA Inlus Lutea, 6d. Alba, 6d.

COCKSCOMB, Dwarf, very large, 6d.

CALCEOLARIA, finest Tigred, 1s.

COBEA Scandens, 3d.

CARNATION, saved from named sorts, 6d.

CENTRANTHUS Macrosiphon, 3d.

CUPHEA Purpurea, 6d.

COREOPSIS, new Marbled, 3d.

DAHLIA, from Mr. Sieckman's collection, the raiser of Gasparine, 6d.

DIGITALIS, Spotted, 3d.

ERYSIUM Barbara Variegata, 3d.

ICE plant, 6d.

IPOMEA Burridgii, 6d. Kermesina Hybrid, 6d.

JACOBIA, Double Crimson, 3d.

LARKSPUR, Dwarf German Rocket, 20 colours, mixed, 6d. Ditto do., 12 separate colours, 2s the collection.

LUPINUS Affinis, new, 6d.

MARTINIA Fragrans, 6d.

MIMULUS, splendid mixed, 6d.

NEMOPHILA Maculata, 6d.

PICOTEE, saved from the finest Stage Flowers, 6d.

PETUNIA, mixed, containing the most striking colours, 6d.

PRIMULA Sinensis, 6d.

65 Packets of the best Hardy and Half-Hardy Annuals, 10s. 30 ditto, 5s.

DAHLIAS.—Our list is now ready, contains all varieties worth cultivating, and may be had on application, Gratis.

London, 86, Borough.

PHLOX Drummondii, beautiful Scarlet, 6d.

Ditto do. Alba (very scarce), 6d.

PODOLOPI'S Chrysantha, 6d.

PORTULACCA Striata Alba, 6d.

RHODANTHE Manglesii, 6d.

SENECIO Elegans Atrocinerreo, new, 6d.

SCHIZANTHUS Retusa Alba, 6d. Retusa, 3d.

Grahamii, 6d.

SAPONARIA Calabrica, 3d.

SILENE Schefeta, 3d.

GERMAN STOCKS, Annual Varieties.—

New Large - Flowered Violet, 10-week, 6d.

Ditto do. Rose do., 6d. Ditto do. Purple do., 6d.

Ditto do. Brown do., 6d. Ditto do. Flesh Colour do., 6d.

Ditto do. Lilac do., 6d. Ditto do. Blue do., 6d.

Wallflower-leaved, finest mixed, 6d. Finest 10-week, mixed, 6d. Double Dwarf 10-week, in 24 separate colours, a packet of each, 4s.

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The following varieties are very gigantic in their habits, and bloom several times in the season.

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Ditto, White, 6d. Ditto, Lilac, 6d. Ditto, Pink, 6d. Ditto, Carmine, 6d.

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THUNBERGIA Albata, white, 6d. Aurantiaca, orange, 6d.

VERBENA, many choice varieties, mixed, 6d.

VISCARIA Burridgii, 3d.

WALLFLOWER, Double Blue, 6d. Ditto Tall Black Brown, 6d.

HOLLYHOCK, fine selected German, mixed, 6d. 18 Prize Varieties, superior double flowers, 3s the collection.

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65 Packets of the best Hardy and Half-Hardy Annuals, 10s. 30 ditto, 5s.

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April 2, 1851.

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guarantees the Seeds he supplies to be genuine.

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Glenny's six sorts of **BALSAM**, in his own sealed packets, 2s 6d. Ditto Straw colour, six seeds, ditto do. do., 6d.

WALCHEREN BROCOLI, 2s per oz. Snow's superb winter White ditto, 5s per oz.

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and Agricultural Seeds. **JAMES CHAR-TRES**, Seedsman, &c., King William-street, City, London, begs most respectfully to call the attention of purchasers to his establishment, where will be found an extensive stock of Kitchen-Garden, Agricultural, and Flower Seeds, selected with the greatest care, and grown chiefly under his own inspection.

J. C. takes this opportunity to return his best thanks to all who have favoured him with their commands during the past season; and it is with much pleasure he can state that numerous ladies and gentlemen who have visited his establishment, as a proof of their satisfaction, have recommended their friends.

A Descriptive Catalogue can be had on application.

Jan. 2, 1851.

DEANE'S WARRANTED GARDEN TOOLS. Horticulturists, and all

interested in Gardening pursuits, are invited to examine **G. and J. DEANE'S** extensive Stock of **GARDENING and PRUNING IMPLEMENTS**, best London made Garden Engines and Syringes, Coalbrookdale Garden Seats and Chairs, Brown's Patent Fumigator, price 10s and upwards.

Averuncators	Fumigators	Hotbed Handles	Rakes in great variety
Axes	Galvanic Borders and	Ladies' Set of Tools	Reaping Hooks
Bagging Hooks	Plant Protectors	Labels, various pat-	Scythes
Bills	Garden Chairs and	terns, in Zinc, Por-	Scythe Stones
Borders, various pat-	Seats	celain, &c.	Shears, various
terns	" Loops	Lines and Reels	Sickles
Botanical Boxes	" Rollers	Marking Ink	Sickle Saws
Cases of Pruning In-	" Scrapers	Mattocks	Spades and Shovels
struments	Grape Gatherers and	Menographs	Spuds
Chaff Engines	Scissors	Metallic Wire	Switch Hooks
" Knives	Gravel Rakes and	Milton Hatchets	Thistle Hooks
Daisy Rakes	Sieves	Mole Traps	Transplanting Tools
Dibbles	Greenhouse Doors and	Mowing Machine	Trowels
Dock Spuds	Frames	Pick Axes	Turfing Irons
Draining Tools	Hammers	Potato Forks	Wall Nails
Edging Irons and	Hand-glass Frames	Pruning Bills	Watering Pots
Shears	Hay Knives	" Knives, various	Weed Extractors and
Flower Scissors	Hoes of every pattern	" Saws	Hooks
" Stands in Wires	Horticultural Ham-	" Scissors	Wheelbarrows
and Iron	mers and Hatchets	" Shears	Youths' Set of Tools

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For 30s, **MARRIOTT'S** much improved Cottage Hive, with glass windows, doors, and thermometer, with four glass store rooms, for obtaining the finest quality of the virgin fruit of industry without destroying the bees, and an interesting building, without foundation, of the Exhibition of Industry. The Bee Pavilion, or Nutt's Collateral Hive, complete with stands, £6 6s. Taylor's Amateur Bar Hive. Huber's Observatory and Box Hives, &c. Bee feeders, and prepared clarified honey for feeding bees, which will pay a heavy interest to the liberal apiarian.

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WEEKLY CALENDAR.

M D	W D	APRIL 17—23, 1851.	WEATHER NEAR LONDON IN 1850.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bef. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in In'						
17	Th	Song Pettychaps shivering note.	29.776—29.718	47—25	N.W.	0.02	3 a. 5	57 a. 6	9 1	16	0 22	107
18	F	GOOD FRIDAY.	29.921—29.861	50—32	W.	0.28	1	58	10 15	17	0 36	108
19	S	Harebell Flowers.	29.484—29.204	39—32	N.E.	0.45	1v	vii	11 25	18	0 50	109
20	Sun	EASTER SUNDAY. Sun's decl. 11°24' N.	29.806—29.564	47—26	N.	0.01	57	2	morn.	19	1 4	110
21	M	EASTER MONDAY.	29.926—29.864	48—27	W.	—	54	3	0 26	20	1 16	111
22	Tu	EASTER TUESDAY. Large Bat seen.	29.930—29.762	48—39	S.W.	0.22	52	5	1 17	21	1 29	112
23	W	ST. GEORGE.	29.633—29.561	50—38	S.W.	0.21	50	6	2 0	22	1 41	113

GOOD taste is that power of the mind which enables it justly to appreciate the beautiful—yet who can say what constitutes the beautiful? Who can discover a combination of form and colour, that all persons at all times shall say is an embodiment of beauty? Many cultivated minds—Burke, and Price, and Payne Knight, and Alison, with many others of lesser mark, have wrestled with the problem, but it foiled them all, and What is beauty? yet remains an unanswered question. It has been said that the precious remains of Grecian sculpture afford standards of real beauty, grace, and elegance in the human form, and the modes of adorning it; but it is not so, for although they are admitted as examples of such excellence by Europeans, they are the very antipodes of what is beautiful in the eyes of the natives of the other three quarters of the globe. Habit—that to which the eye is accustomed—fashion, call it what we will, sets all standards of ideal beauty at defiance. “Of this,” says Mr. Payne Knight, “the revolutions in dress only, not to mention those in building, furnishing, gardening, &c., which have taken place within the last two centuries, afford ample illustration; and it is not the least extraordinary circumstance in these revolutions, that they have been the most violent, sudden, and extravagant in the personal decorations of that part of the species which, having most natural, has least need of artificial charms; which is always most decorated when least adorned; and which, as it addresses its attractions to the primordial sentiments and innate affections of man, would, it might reasonably be supposed, never have attempted to increase them by distortion and disguise. Yet art has been wearied, and nature ransacked; tortures have been endured, and health sacrificed; and all to enable this lovely part of the creation to appear in shapes as remote as possible from that in which all its native loveliness consists. Only a few years ago, a beauty equipped for conquest was a heterogeneous combination of incoherent forms which nature could never have united to one animal, nor art blended in one composition: it consisted of a head, disguised so as to resemble that of no living creature, placed upon an inverted cone, the point of which rested upon the centre of the curve of a semi-elliptic base more than three times the diameter of its own. Yet, if high-dressed heads, tight-laced stays, and wide hoops, had not been thought really ornamental, how came they to be worn by all who could afford them?” “In judging, however, of the works of nature, it must be owned that there appears to have been less inconstancy; the beauties of particular kinds of trees, plants, flowers, and animals, having, I believe, been universally recognized in all ages, and all countries; but, over these, it must be remembered that the power of man is more limited, nor can he indulge those partial and extravagant caprices of his taste, which he has so abundantly displayed in the productions of his own art and labour. As far, however, as he has been able, he has done it most profusely. At one time he crops the tail and ears of his dogs and horses; and, at another, forces them to grow in forms and directions, which nature never intended; his trees and shrubs are planted in fantastic lines, or shorn into the shapes of animals or implements; and all for the sake of beauty. Happily for the poor animals, it has never appeared possible to shear or twist them into the shapes of plants, or it would, without doubt, have been attempted; and we should have been as much delighted at seeing a stag terminating in a yew tree, as ever we were at seeing a yew tree terminating in a stag. These metamorphoses of plants are not now, indeed, in fashion; but it is merely fashion that has exploded them; and as both fashions have had their respective admirers, not only among the vulgar, but among the most discerning and enlightened of mankind, it may reasonably be doubted, whether either of them be at all consonant to the real principles of beauty, if any such there be.”

That there are no such principles, we fear must be admitted, and that as there never was a face so ugly as to find no taste that could discern in it a line of beauty, so has there never been a fashion for arranging dress, or dwellings, or gardens, that has not been generally adopted and admired for a time. It is vain, with such facts before us, to search after the principles of beauty; for abstracted beauty can but be what is pleasing to the many at a given time, and at a given place; yet, as we have already observed, many men of powerful minds have sought to detect those principles, and the writings of one of those men, RICHARD PAYNE KNIGHT, are now open upon our table. He is among the defeated, and as he failed in the research, who is likely to succeed? Nursed in the lap of wealth, with an eye that had dwelt, and a hand that had rested upon all the best that remains of Grecian and Roman art; highly educated, and with a taste that could appreciate and practically demonstrate what is beautiful in nature—beautiful according to our ideas of the beautiful—yet, in no one page of his writings has he demonstrated a principle of universal beauty. He has shown us that Burke and Price were mistaken, but he has not substituted one truth of his own in the niche from which he plucked their error. We have wandered with him through every passage of his *Landscape*, his *Progress of Civil Society*, and his *Analytical Enquiry into the Principles of Taste*, all varying in merit, all sprinkled over with flowers; full of useful suggestions, full of amusement, and beaming with light

upon many subjects of taste; but we have never found that he discovered one of the principles after which he inquired. A man of taste, we fear, like the poet, has his gift as a birth-right; and that this was the case with Mr. Knight, there can be no doubt. The son of the Rev. Thomas Knight, he was born in the year 1750, at Wormsley Grange, in Herefordshire, and weakly and sickly throughout childhood, he remained without classical instruction until after the death of his father, in 1764. The consequences of that neglect he has thus confessed:—

“And tho’ neglect my boyish years o’erspread,
Nor early science dawning reason fed;
Tho’ no preceptor’s care, or parent’s love,
To form and raise my infant genius strove;
But, long abandon’d in the darksome way,
Ungovern’d passions led my soul astray,
And still, where pleasure laid the bait for wealth,
Bought dear experience with the waste of health,
Consum’d in riot all that life adorn’d,
For joys unrelish’d, shar’d with those I scorn’d;
Yet, when exhausted spirits claim’d repose,
Each milder spring of mental vigour rose,
Aspiring pride my soul to science led,
And bade me seek at once its fountain-head;
Its fountain-head, whence Grecian genius pours
O’er the wide earth its everlasting stores;
And in each deep and lucid current shows
How fancy, join’d with ease, corrected flows.”

Sent to school after his parent’s decease, he rapidly progressed in classical acquirements, and in early manhood had passed over Italy, as much in accordance with his taste for the beautiful, as in the pursuit of health. Some of the results of his studies, and his travels, appeared in the works we have enumerated, but others remain to be told. Inheriting, from his grandfather, Downton, near Ludlow, he devoted much of his taste and time to the decoration of its grounds; but he was not less assiduous in gathering together the beautiful remains of antiquity, and so rich had become his collection, that when he died on the 24th of April, 1824, and bequeathed it to the British Museum, it was valued at £50,000. His endeavours to decorate the grounds of Downton were most successful, and with this sketch of them, as they existed during his life, we must close our notice:—

“The grounds are a happy exemplification of the ideas contained in *The Landscape*. Nature has done that which he has not suffered the hand of art to spoil. The grounds fall rapidly from the house into a beautiful little valley, at the bottom of which is a wild and impetuous stream; and immediately from the opposite bank rises the hill again, clad with rich wood in a variety of shapes to its very summit, and opening at parts into rude sheep-walks, the whole formed out of a waste, which formerly went by the name of *Bringwood-chase*. But this is not the most characteristic part. To the right of the castle the ground does not fall as it does from the castle itself, but pushes forward in a flat till it hangs almost perpendicularly over the stream, covered with wood to its very foot. Here, then, the valley is literally of no greater width than the stream itself; for the hill rises equally abruptly from the other margin. At the point where the Team issues from its narrow banks, to the wider valley, which is overlooked by the castle, Mr. Knight has thrown a bridge across it. A walk descends to this bridge; which, after crossing a narrow path to the right, leads along the margin of the river, the most wild, rich, and solitary path I ever trod, till it brings the passenger to a recluse mill, at which a rustic bridge again conveys him over the furious water to the opposite bank, where an irregular path, still by the side of the river, conducts him till he gradually ascends again to the castle. To the left of the castle the valley winds with the stream in its course to Ludlow. In the valley to the left of the castle lie the great iron forges, probably the foundation of the riches which this family now possess. Would that fortune would more frequently put wealth into the hands of people equally adorned with mental qualifications! Beyond Bringwood-chase, on the hills in front of Downton, stands a lone cottage, called *Marinold*, in a most romantic situation, looking through a deep valley, whose sides, up to their very summit, are clothed with rich wood, into a flat and distant country, covered with seats, villages, and churches. The castle of Ludlow, immortalised by the first representation of *Comus* within its walls, and by the writing of *Hudibras* over its gateway, exhibits now the most melancholy ruins. Its roofs and very floors are at length gone, and tumbling walls alone remain.”

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-four years, the average highest and lowest temperatures are 57.9° and 33.1°, respectively. The greatest heat, 71°, occurred on the 17th, in 1844. During the time 98 days were fine, and on 70 rain fell.

WE have purposely abstained from making any comment upon *The National Floricultural Society* until their first exhibition day had passed, so that we might judge of the society by its acts rather than by mere anticipation and calculation of probabilities. We shall conclude our notice with a report of that day's exhibition, and, judging by the results, we consider the society has begun with a demonstration of good judgment in the award of certificates, and of care not to bestow them rashly. This is the only way in which the society can be rendered, as it is capable of being rendered, an instrument of great protection to the purchasers of flowers; but we shall watch over it with great jealousy; for in proportion as public confidence reposes on it, so will be its power to sanction a vast measure of imposition. Its very commencement was certainly wrong; for of the sixteen censors first appointed, eleven are dealers in florists' flowers, and some of them, if we are correctly informed, have sent out, as first-rate, flowers which intimate, looking at the mistakes in the most favourable light, that they are not very competent for a censorship. Now, we think, since the censors, or judges of merit, are, beyond all controversy, the most important officials of the society, they should not have been appointed, until a general and fully attended meeting of the committee had been held to decide upon their eligibility. However, as we commenced by saying, so we repeat, we will judge them by their acts, warning the society at the same time, that although each member may be strong in his consciousness of a determination to do right, yet that nothing must be done to shake the public confidence by giving a cause for even suspicion. The majority of the members are florists, nor could it be otherwise, nor should we wish it to be otherwise if it could; for we know of no other body of men either so deeply interested in the prosperity of floriculture, or so capable of forming a correct judgment on the merits of flowers. It will be in their power to sustain that prosperity, by pointing out with a finger of light which flowers are most worthy of purchase; because we can tell all florists that there is a growing disinclination for buying novelties. Purchasers have been too often deceived for them to have confidence even in the assurance given by respectable dealers; and the reason is told in one sentence of a letter now before us: "A man's judgment is unconsciously biased to overlook defects in that which is his own bantling." To avoid even suspicion, we hope never to see Mr. Appleby one of the censors when it comes in question whether a flower of Messrs. Henderson is entitled to a certificate; for though neither would these gentlemen wish for a prejudiced decision, nor do we think Mr. Appleby capable of giving one, yet we would have the society free from any ground for suspicion.

The *National Floricultural Society* held its first meeting for the exhibition of seedling florist's flowers at their rooms, 21, Regent's-street, London, on Thursday, the 3rd instant, Mr. James Veitch, of Exeter, in the chair. There was a respectable number of florists and amateurs present. The tables were well filled with collections sent to ornament the exhibition, *Cinerarias* being the most prevalent. The principal contributors were Mr. E. G. Henderson, of the Wellington Nursery; Messrs. Henderson, of Pine Apple Place;

Mr. Dobson, gardener to E. Beck, Esq.; Mr. Ayres, of Blackheath; Mr. Robinson, of Thames Bank; Mr. Keynes, of Salisbury; Mr. Salter, of Hammersmith; Mr. Ivery, of Peckham; and Mr. Gaines, of Battersea. These collections were generally of the best old favourite varieties, and in respectable condition.

Mr. Turner, of Slough, had a very good pan of *Pansies*, and a collection of *Auriculas*, well bloomed.

Mr. Bragg, of Slough, sent a pan of *Pansies*.

Messrs. Henderson, of Pine Apple Place, sent a truly fine collection of the best kinds of *Hyacinths*, all legibly named; also a collection of *Epacris*, amongst which was that fine variety named *Epacris hyacinthiflora candidissima*; also a nice selection of new *Narcissus tazetta*, better known as the *Polyanthus Narcissus*. There were also small collections of *Polyanthuses*, *Gloxinias*, &c. &c.

These plants, in full bloom, and generally well grown, were very creditable to the different exhibitors. The grand object of the meeting was the seedlings. In *Cinerarias*, the numbers were considerable; we wish we could say the merit of them was equally so. Very few were placed by the censors.

Mr. Ayres sent a seedling of great merit, named *Orpheus*; form first-rate, habit good, petals of good substance, colour a deep rosy lilac, disc rather small. This obtained, and deservedly, a certificate.

Mr. Smith, of Tollington Nursery, sent, also, a seedling of great merit; pure white with a blue disc, size medium, form good, petals well-shaped but rather thin. A certificate was given to it.

Mr. E. G. Henderson, with several others, sent one named *Lovliness*; white ground, reddish-purple tip, dark disc. This variety has first-rate properties, but some of the petals of part of the blooms was defective. The censors wished it to be exhibited again, and only passed a favourable opinion upon it.

The same gentleman sent another desirable variety, named *Christabelle*, which was not sufficiently expanded, but promises to be a good variety. This, also, was desired by the censors to be sent again when in better condition.

Mr. Rogers, of Uttoxeter, sent two seedling *cinerarias*, which, when better grown, the censors thought would be desirable varieties. They were *Field Marshall*, white ground delicately tipped with sky blue, good form and substance; and the other, *Lady of the Lake*. This was a well formed flower of good substance, ground colour white, with pale rose tips. The censors desired these two, also, to be sent again.

Mr. Turner sent some seedling *Pansies*, one of which attracted attention. It was named *National*; creamy white ground, purple margin, fine yellow eye, good form, but rather rough at the edges, probably owing to the cold wet season. The censors desired this to be sent again.

Mr. E. G. Henderson obtained a certificate for a seedling *Rhododendron*. Trusses large, flowers well-shaped, bluish white, the top petal richly dotted with dark crimson spots. It was named *R. superbissimum album*.

Messrs. Standish and Noble sent an *Azalea Indica*, named *Vittata*. The merits of which were novelty in colour, being of a creamy white with purple stripes.

The above were all the seedlings the censors thought worthy of notice. And this is as it ought to be. Unless seedling flowers are decidedly superior to the older varieties, it is an imposition upon the public to send them out as new and improved varieties. The censors at this meeting were determined not to notice any inferior varieties merely because they were new, and this principle, we hope, will be carried out to the fullest extent.

Messrs. Veitch, of Exeter, sent a fine cut sample of their *Fuschia spectabilis*; also a cut specimen of *Rhododendron jasminiflora*; a tolerable seedling *Camellia*, named *Storeyii*, its fault being having the petals too much pointed.

Upon the whole this is a fair beginning of this society, and we trust it will act up to its professed principles, and thus become a vehicle for proclaiming to the public really good seedling flowers.

The Censors were Mr. Appleby, of Pine Apple Place; Mr. Cole, gardener to J. Witmore, Esq., Birmingham; Mr. Neville, Peckham Rye; Mr. Hamp, Brixton; Mr. Lidgard, Hammersmith; and Mr. Parsons, Enfield.

GARDENING GOSSIP.

THE *King of the Dahlias*, which has been represented as the best crimson self in cultivation, and was not intended to be let out, but grown and shown everywhere all the next season, has, nevertheless, in consequence of the demand, been sent out partly in dry roots, but we hope will not be spoiled by hard working. We would much rather send to the fountain head for plants on the first of May, than order them of anybody who makes a hundred plants from a dry root. In fact, it has ruined many a good dahlia to drive it along at railroad pace for the sake of numbers.

The *Eagle Gardens*, in the City Road, several times the arena of extensive and effective flower-shows, have passed into new hands, and it is intended to make them always conspicuous for flowers of some character.

The new proprietor intends that the place shall be liberally furnished with the finest plants that can be had, adapted for the situation, and to keep them constantly renewed. The place is convenient for metropolitan exhibitions, because there is no expense called for on account of tents. There are covered ways, and extensive light rooms, equal to the accommodation of an immense number of plants and flowers, and we are not sorry that the gardens will, at the commencement of the season, assume quite a floral character. A regular gardener will be engaged. The neighbourhood is associated with the names of some of the oldest florists; Gabel, Drinkwater, Franklin, and others, all raisers of florists' flowers, were located where the ground is now covered with densely crowded houses.

The prevailing evil, and one which is very discouraging to amateur florists, is the multiplication of named flowers, far beyond the number that deserve such distinction. Our friends in Holland will undertake to supply fifty varieties of named *Crocuses*, a hundred named *Ranunculuses*, the same number of *Anemones*, and so we go on through all sorts of flowers. Now we have tested these little matters, and we find that from the hundred named *Anemones*, or *Ranunculuses*, we could not select ten; many we could not tell one from the other, so nearly were they alike; many were not worth garden room, so inferior were they to even common sorts on borders; and really amateurs must shut their pockets against these wholesale demands, for it is the only check the system can receive.

So long as buyers are found for twenty bad things to one that is good, or a hundred varieties to fish out five good ones with difficulty, so long will the bags of a hundred come, with flaming names for all, as unlike each other as the flowers are alike. It is a legal way, perhaps, of obtaining money, but not a moral method; and it is the duty of florists to resist all such temptations, and not to be such easy dupes. This may seem to come rather oddly from one who confesses that he fell into the trap himself; but the fact is, we buy everything, that we may be able to speak of them of our own knowledge; and our readers may make up their minds, that when things are sold by the fifty or hundred varieties, three-fourths, if not in some cases nine-tenths, will be found of no service whatever. It is the same with many of our own florists. A man sends out a dozen Dahlias, or Geraniums, or Fuchsias, or Verbenas, where he ought at most to send out three or four; and he loses many a customer, who cannot afford to buy all, and so has none, until he sees them in other people's hands for a year. In resisting these wholesale demands, therefore, the florist confers a benefit on his brother cultivators; and for all the custom we would recommend, the Dutch may keep their bags of named *Anemones*, *Ranunculuses*, *Crocuses*, *Irises*, and other similarly mis-described things to themselves. The

Dutch have hitherto found the English florists very tractable. It is time this was done with, and that even our young beginners should be wiser.

The *South Devon Horticultural Society*, which holds its shows in the New Horticultural Gardens at Plymouth, has elected Mr. Ayres, Mr. Beck, Dr. Lindley, Sir J. Hooker, Mr. Marnock, G. W. Johnson, Esq., Mr. Paxton, Mr. Wood, Mr. Neville, Mr. Glenny, Mr. Herrington, and some other known prominent florists and amateurs, honorary members of the society.

At the last meeting, Mr. Rendle observed that if the society continued to progress as it had done up to that time, and he received the encouragement he anticipated, he should erect on the grounds a Paxtonian Palace of Glass, one hundred and fifty feet by fifty, which would occupy three times the area of the great assembly room at the Royal Hotel. The shows are to take place in May, July, and September.

The *Trowbridge Horticultural Society* has fixed its show for the 27th of August, as nothing will interfere with that day so far as shows are at present fixed.

In a paper on the culture of *Weigela Rosea*, read at one of the societies in town, it was recommended to treat the plant precisely the same as a rose; to cut all the shoots in to two eyes; and it was remarked that the similarity of the habit would be found most striking between this much abused plant and roses generally.

Among the most popular and lasting flowers that are best supplied at Covent Garden Market (which is of itself equal to any Horticultural Show), we may mention the *Euphorbia splendens*, which is one of the very best flowers in cultivation for bouquets. As good plants, well grown, are a perfect blaze of bloom, we know not how to account for its scarcity.

Orchidaceous flowers are now as commonly supplied as any ordinary subjects. The entire middle row is set out with such a display of cut flowers, as we never saw equalled at a show.

Societies for the Improvement of particular Flowers are greatly on the increase, and the service they render is incalculable. They show but once a year. Every member is bound to exhibit the best he can, and no matter what flower it be. The meeting is considered a holiday.

The Dahlia, Tulip, Ranunculus, and Pansey, are the greatest favourites round London. The *Chrysanthemum* is coming rapidly into favour, and societies devoted to it are forming in imitation of the "Stoke Newington," which was the original. One at Highgate has acquired great strength. The *Pansey* Society at Hammersmith keeps the lead with that flower. There is a talk of establishing *Auricula* and *Polyanthus* shows at the same house; Mr. Lidgard, the owner, being an old and enthusiastic florist, and known to all the circle round London.

We have a new *Rose Nursery* at Ealing. Mr. Wilkinson, late partner with Mr. Curtis, of Glazenwood fame, has planted many thousands of roses, and the addition to what may be called our London nurseries, has excited considerable notice.

In a monthly publication of deserved eminence, we lately observed some remarks on individuals alleged to be good judges on particular points, but most unceremoniously condemned as no judges of others.

We thought at the time it was stepping out of the way, and endangering the good opinion which might have been formed of the article, as a whole. It is almost too much to say that Mr. A. is a first-rate judge of soft florists' flowers,

but knows nothing about plants; when it is quite clear to many of the public that he must know as much of one as of the other; and it is not quite clear whether the very party so pronounced upon, might not give some very useful lessons, and whether he has not already given some very important lessons to plantsmen, so called, upon the creditable manner in which plants have been distorted and *unnaturalised* for the purposes of exhibition. Indeed, it was mentioned at a recent meeting of florists, that it was some of those unanswerable strictures on the ungardener-like practice of a few successful exhibitors, that induced the attack on his judgment. Truth, however, will prevail; and there will be a speedy change in the horrible practice (founded on props and wires), that has completely destroyed the nature and the habit of really good subjects.—E. Y.

NEW PLANTS.

THEIR PORTRAITS AND BIOGRAPHIES.



SPOTTED-LEAVED BERTOLONIA (*Bertolonia maculata*).—*Botanical Magazine*, t. 4551.—This is a little gem for our stoves from the Brazils, requiring the heat of a damp stove in summer, and to be kept cool and rather dry while it is at rest during our long winters. It belongs to the Natural Order *Melastomads* (Melastomaceæ), or mouth stainers, so called on account of the fruit of some of them, on being eaten, staining the mouth, as black currants do. In the Linnæan system, it comes in the first order of the tenth class, *Decandria Monogynia*, having one female and ten male organs. The genus was named by Joseph Raddi, not by Martius as has been asserted, in compliment to an Italian botanist, Bertoloni, who published a flora of his native land, at Genoa, about the beginning of the present century.

If we may judge from the number of genera which were named in honour of Bertoloni, he must have held a high standing in the opinions of contemporary authors—Decandolle, Sprengel, Rafinesque, and Raddi, having each named a *Bertolonia*, but the subject of our present biography by the latter has the precedence, being the first of the four. Decandolle's *Bertolonia* is a Composite plant (Asteraceæ), that by Sprengel a Guttifer (Clusiaceæ), and Rafinesque's is a Lippia, a genus of aromatic plants belonging to the

order Verbenes (Verbenaceæ). Our subject was introduced in 1829 from the Continent, by Mr. Henderson, of St. John's Wood Nursery, London, under the name *Eriocnema cereum*, but Sir W. Hooker has restored the legitimate name. Martius called this *Bartolonia Triblemma*, now a synonyme of the genus; and had it not been that *maculata*, the specific name, had precedence, we should prefer the continental specific (by Naudo), which means spotted—the leaves being spotted on the upper deep green surface, while the under side is a reddish purple. These curiously coloured leaves are of themselves sufficient to render this little herbaceous plant conspicuous among a collection of stove varieties, without the aid of the gay rose-coloured blossoms, which are borne on spikes not more than six inches high.

Stem single, or slightly branched, short, thickly covered with rusty hairs. *Leaves* opposite, long-stalked, pointed, heart-shaped, slightly tooth-edged, five-nerved, dark velvety green, and bristly above, purple beneath. *Flowers* in a terminal raceme; stalk red and bristly; calyx three-angled, ribbed, fringed with hairs; petals five, rosy, reversed egg-shaped.

Add to this that the plant is easy to manage, requiring very little room, and we may venture to predict that it will soon become a general favourite.

Speaking of it botanically, however, we must call it anomalous among its race, for it has much of the habit and also the winged fruit of a *Begonia*; and, notwithstanding the great distance which lies between Begoniads and Melastomads, in the consecutive arrangements of botanists, such plants as this seem to indicate some near relationship between the two orders.



BRACED GAULTHERIA (*Gaultheria bracteata*).—*Botanical Magazine*, t. 4461.—The genus *Gaultheria* originated with Linnæus, and was named in honour of M. Gaulther, M.D., a French Canadian, who wrote a treatise on the maple sugar. It belongs to the Natural Order *Heathworts* (Ericaceæ), and is nearly related to *Andromeda*. In the sexual system of Linnæus, it is in the first class of the tenth order, *Decandria Monogynia*, having ten stamens and one style.

Gaultheria bracteata was so named by Mr. George Don, from the numerous rosy bracts which accompany the flowers on their axillary spikes. Ventenat called it *Gaultheria erecta*, or upright, in opposition to the trailing habit of the original species. Humboldt, Bonpland, and Kunth, gave it three names—*odorata*, or sweet-scented; *cordifolia*, or heart-shaped leaved; and *rigida*, which nearly accords with *erecta* of Ventenat; so that between them, these authors have given us a tolerably good insight into the nature of this addition to our Gaultherians. It was lately figured in the *Botanical Magazine*, from a plant which flowered in the Kew Gardens last summer, where it was introduced in 1848. Its habit and red flowers will prove a good addition to our borders of new and select plants in summer, but it must be put into a pot at the end of the season, and have the

shelter of a cool greenhouse, or a frame, from which the frost can be excluded.

The genus was founded on *Gaultheria procumbens*, a little trailing evergreen under shrub, a native of North America, where the leaves are substituted for those of the tea plant; and the berries, which are succulent, are eaten, or steeped in brandy, and used as aromatic bitters. The berries of *Gaultheria shallon*, another North American species, are also eaten, and are said to be pleasant to some palates. The plant called *Wax-cluster* by the settlers in Van Diemen's Land, is *Gaultheria hispida*, but as far as we are aware of, is not yet introduced to England. The berries of the *Wax-cluster* are snow white, having a grateful flavour, not unlike that of the best kinds of gooseberry. And the berries of another kind of *Gaultheria*, called *antipoda*, a native of New Zealand, are said to be still more grateful. The subject of our present biography is from the Andes of Colombia, and we have one called *fragrans*, from Nepal; so that *Gaultheria* has a wide geographical range.—B. J.

THE FRUIT-GARDEN.

DISBUDDING.—Once more we must return to this necessary procedure. If any especial memento were necessary to remind us of the rapid onflow of the stream of time, the recurrence of the disbudding season would suffice; for it really seems but a few hours since we last adverted, in a pointed way, to this subject, about a twelvemonth since. We must again crave the patience of our more knowing readers, whilst we enter into the details of this practice for the sake of beginners in gardening.

Disbudding, then, signifies the removal of a portion of the young shoots from trees in a course of training, the retention of which would lead to confusion in the tree, and so obstruct the light, as to induce barrenness or disease. Now, a young beginner should learn betimes to distinguish between *bearing wood* and that which has a tendency to become barren, for on such a knowledge alone can this practice be safely hinged.

There is a vast amount of difference in shoots from the moment they "break," as the bursting of the buds is technically termed. The wood of all fruit-trees, whether in leaf or out, may, for all practical purposes, be classified under three heads, viz.:—the luxuriant, the fruitful or moderate, and the weak. It is manifest that many connecting links must exist, for the strongest of what may be termed weak shoots, will, of course, trench on the moderate; and the strongest of the latter, in like manner, on the luxuriant; so that it is not possible to give a decisive and clear definition of either. The luxuriant, or gross, are, however, the most marked; for such, in most fruit-trees, evince a disposition betimes to produce side-shoots long before the young growth is completed.

Such wood, points to a strongly impulsive root-action, and to great activity in the vital fluids, which, under such circumstances, are but too apt to produce greedy monopolists, which fatten at the expence of the bearing wood; and is neither less nor more than an effort of nature to enlarge the system of the tree; and, in gardening words, to throw the tree into a wild state, inimical to the production of the greatest amount of fine fruit in a given space. Such shoots, however, in practised hands, are capable of being made subservient to the purposes of high culture;—by keeping a check on their absorbing powers, they may be made to cater for the inferior branches; for they, doubtless, encourage the formation and extension of roots; and by their extensive elaborations produce accretive matter for the inferior portions of the tree.

The beginner, therefore, should commence operations by making himself acquainted with this character of wood; he may then study the weak class, which a gen-

tleman accustomed to "Change" would perhaps term "*below par*." The latter class may be readily understood, for it possesses the very opposite characteristics of the former; so far from producing side shoots, it has scarcely energies enough to elongate with any sort of freedom; the foliage also is diminutive and poor-looking.

Now, betwixt these, the very antipodes of growth, must be sought out, what is generally termed by practicals, the true or fruitful wood: that is to say, wood which has an *immediate* tendency to form blossom-buds. Such wood, although by no means so thick as the luxuriant shoots, is yet generally what may be termed stout: that is to say, compact in character, possessing liberal foliage, and, above all, being short-jointed. The latter circumstance, indeed, will almost of itself point out wood of fruitful tendencies in most trees; for both the luxuriant and the weak are for the most part characterized by a long internode, as botanists term the portion of wood between each two buds. Let it be understood, however, that there are here, as in most other cases, exceptions; and we may point, perhaps, to the peach and nectarine first, as the best study for a beginner, and most illustrative of the points here explained. Next in order we may place the pear, then the plum, and next the apple, amongst our ordinary fruits; whilst occasional exceptions may be taken for such as the fig, vine, &c.; bearing in mind, as before observed, that short-jointedness is an almost universal criterion of fructification.

The PEACH and NECTARINE will first claim the attention of the disbudder; these come to hand about the middle of April in most parts of Britain, and require some nice handling. Where they bud freely, the first instalment of disbudding may consist in merely removing *obvious* superfluities. For instance, where several young shoots are crowded together in a space evidently too small for their full development, there can be no harm if the tyro removes some two or three, which, possessing inapt characteristics, as heretofore explained, and pressing keenly on each other, bid fair to create confusion in that portion of the tree. We advise this as a matter of caution to the uninformed in such matters, being quite aware that our regular practitioners would not hesitate to proceed a step further. And here a digression must be pardoned, as to the general principles on which disbudding ought to be founded; and which, although taking the character of an afterthought, is at any rate part and parcel of the business—as a matter of time we mean. It is a long and well-attested fact, that no tree or plant, not even an apple or a pear, will bear to be divested of a considerable amount of leaves at any period, without giving the most convincing symptoms of the effects of injudicious meddling. The evil effects of a heavy and sudden disbudding, irrespective of the functions which nature has assigned to the leaves of plants or trees, has been frequently pointed to in previous papers, and involves a doctrine of indisputable character. We will, therefore, not at this time travel that ground over again, but merely repeat the warning; and again repeat, that it is quite correct; that it is important, and that it has a bearing on most of the subjects of the vegetable kingdom.

In the Peach and Nectarine, when growing freely, there is always a host of jolly-looking sprouts to be found, starting almost at right angles from the wall. Now, your fructiferous shoots are by no means so assuming; such are for the most part content to follow their ancestral guides, and to bend willingly to the wall, with the freedom with which we have been told our poor cavalry horses have done to the bayonet on the battle-field. These would-be-branches, if permitted to reign unmolested, would speedily render the surface of the wall, in profile, a mere coppice; need we add, that such would be incompatible with the permanent

welfare of the trees. Again, numbers of young shoots may be found jammed between the branches and the wall; this, it is evident, is not a favourable situation for their full development or for their convenient training, and all such, unless in especial cases, should be at once rubbed away.

The cases here alluded to are those wherein naked portions of the wall intervene, or in the anticipated decay of certain branches; here, any covering is better than a naked, and, consequently, lost portion of walling, and shoots of any description may be reserved. These things done, that is, all improper "foreright" and "back" shoots removed, which terms are used by practicals, the peach-dresser is in a position to commence, what we may term, singling-out, that is thinning-out crowded spray, in doing which it frequently happens that shoots in every way eligible to be reserved as far as fructifying character is concerned, must of necessity be stripped away. Of necessity, we say, because there will not be found training-room for them.

We may here, however, pause for a moment, to observe on the amount of time such processes are permitted to occupy—an important affair. Our practice is to commence immediately we can fairly get hold of the young shoots; this is generally about the third week in April in Cheshire, and is, for the most part, performed about the period of the final falling away of the bloom or corolla. We contrive, too, in general, to run the hand over the Peaches and Nectarines—for it is these we are now considering—the moment before we apply the tobacco dressing; for if the aphides have commenced operations, we are thus enabled to remove any curled or much infested leaves, insects and all; and then we carefully submit to a watery ordeal without hesitation. The shoots, moreover, are easier to distinguish before the tobacco-water is applied. Nevertheless we would by no means tie the hands of our readers in this respect; for happen what will, let by all means the timely destruction of the aphides be a ruling consideration. As before observed, we then remove the foreright and back shoots; and in about half a dozen more days we commence "singling out," as we term it; merely, in the first instance, setting the leading shoots at liberty, and removing one of twin shoots, which frequently abound. In another week or so we again pass our hands over them, still removing surplus shoots about which there can be no doubts; and after this there is generally little to be performed in this way until the period for fastening down the young shoots in reserve; which brings us up to the middle of June, or nearly so.

We may here recapitulate the chief features of the practice. Commence early; disbud lightly and frequently; and in all doubtful cases, when the shoots get to be some three or four inches in length, be content with nipping off the end of the shoot, as a *pro tempore* kind of procedure; reserving the right of a total stripping away of such shoots ultimately if needs be. We will advert to other fruits shortly. R. ERRINGTON.

THE FLOWER-GARDEN.

If the old saying, "long wet, long dry," holds good this season, next May or June will be anything but a good time for the flower-garden; and the sooner half-hardy plants are fit for removing into cool temporary beds, the more able they will be to stand against hot dry days, and cold nights with easterly winds; perhaps the worst kind of weather for turned-out plants. I do not recollect a better winter for transplanting fine trees and shrubs, laying grass, or making new walks, than the one we have just got through; and that was our chief employment here since last September, or I might say earlier. We have relaid a large breadth of grass, or

turf, which looks now as if nothing had been done to it. After *laying turf* we do not beat it down much. Hard beating grass for the sake of getting it more level is a practice we do not approve of; but all that is laid in one day should be well rolled before the work is left off for the night, and as often for a month or two afterwards as it can be done, more especially after frost or rain. For the first three or four cuttings after turf is relaid, I think the mowing machine preferable to the best mower with the scythe, because the bottom is not so sure or yielding as that of an old lawn. Some parts will be much harder and some more soft, and the scythe is more apt to graze or shave the harder parts than the machine; and a piece of grass, with some parts too closely cut, and other parts hardly close enough, looks patchy; besides the risk of a dry May, which might scorch the barest places, and so disfigure the place still more, until the July rains, or may be later rains, with longer nights put all to rights again; therefore, we have determined to keep the scythes off our new laid turf as long as possible. Then, as to those *trees and bushes which have been lately removed*, we have come to this conclusion, that after the first week of dry weather they shall be regularly watered at the roots once a week, and some of them, perhaps, oftener; and, also, on mild afternoons, the garden-engine for syringing all over the leaves shall be applied. The driest and most thirsty kinds of soil, if stirred deeply as for planting, cannot get dry in a week after such heavy and continuous rains as we have had this spring, and this is very likely to lead thousands astray in the matter of watering such things. It is not, however, when the soil gets dry down to the roots that one ought to begin watering—far from it; all the roots which feed the newly planted things are only newly formed, and they are as touchy as gunpowder, and a sudden drought will be certain to damage them. Add to this the chances of a long continuance of dry weather, bright sunny days, and parching easterly winds, all acting in conjunction to dry the system of the tree faster than the roots can forage for it, and I think we shall have made out a fair case for early watering at the roots. But there is another inducement this season for attending to this work in proper time. There are more new roots now to such plants as we are considering than ever I remember to have seen; caused, no doubt, by the mildness of the winter, and the young wood looks as if the plants had not been removed, so that the wood and the leaves will be less likely to withstand too much dry weather, than if they were in the crippled condition in which others, under similar circumstances, were in this time last year from frosts and cold weather. What we consider now as favourable circumstances may, therefore, tell so much against us by and by, and a gallon of water given in good time, and even before there is any apparent need for it, may save nine, which given when too late may not save the ten after all; and, lastly, now that we are sure of an abundance of active roots, a gallon of liquid manure, not too strong, will go farther in keeping a tree prosperous than four gallons of rain or pond water. But as liquid manure is treacherous, and even very dangerous in the hands of new beginners, let us say that your trees are first to be watered with pond water, and directly afterwards apply the strong water as an extra dose. Those who drink spirits in water know very well that it is easier to get down when much reduced, than when less water is added; but reduce it as they may, they have taken down the same quantity of spirits to keep their spirits up; and it is just so with this way of managing liquid manure. I am not sure whether they have yet proved that the soil, say in a pot, after being thoroughly wetted with the hungriest kind of water, is capable of retaining the goodness out of liquid manure if applied immediately afterwards; but if it can be proved that soils are capable of doing so, or even proved the thing

to be impossible, the information would be of immense advantage to all those who have not a practical knowledge of the effects of liquid manure on the different plants they grow. I have lately read in the *Gardeners' Chronicle*, that superphosphate of lime is the best thing yet discovered for encouraging a transplanted tree to make fresh roots in abundance, and that brought to my mind a very early idea of my own, which, although I never yet got rid of it, seems like looking for the philosopher's stone. It is that *some* preparation of *something*, or the essence of *something* else, might be hit on which would cause cuttings of all sorts to root as easily as those from a Verbena or Fuschia, and whether I live to see the day or not, I am almost persuaded the preparation will be found out some day or other; perhaps this quality in this superphosphate is the first step for the discovery of this grand secret.

For some years past I have thought of making an early May bed of a little trailing plant with blue flowers, which is seen by road sides or banks all over the kingdom; the name of it is *Veronica chamædrys*, or German Speedwell; but I have been too late every season in following up the resolution till this spring. There is no question at all about this plant making the very richest bed of that colour that can be made in May. This every gardener allows; but what I want to prove is, whether by taking this plant at the end of March, and so on to the end of April, cutting off most of its trailing branches, dividing the roots into little separate plants, and then setting them in a rich bed, I cannot cause it to flower a month or six weeks later than its usual time, and also keep in flower double the time it does in the wild state. I shall, also, try and raise seedlings from it under cultivation. I have, over and over again, done the same thing with the *Heartsease*; and last season I took a quantity of old strong plants of them, just about this time as they were coming into bloom, cut off the shoots and divided the roots, in short, treated them in all respects as I have just done with the little *Veronica*. Some of the plants divided into eight pieces, and all of them pay well for this treatment. Their flowering season is put back till near Midsummer; but they never fail to go on growing and flowering to the middle or end of September.

Now by burning the label on which the name of a new pansy comes home, by keeping three or four kinds of yellow together, and the same with the other colours in this group, and forgetting the properties, circles, and other geometric figures, a flower-gardener might make five or six distinct kinds of beds of the *Pansies*, or edgings of so many colours to suit other beds, by this system, without running the hazard of being led away into the mysteries of *Floribunda*. At any rate, as this is the proper season, any one can try the experiment of late-flowering pansies without the aid of seedlings, and without spoiling the spring bloom, as all the best may be allowed to do as usual. I never could see any beauty in a bed planted with all sorts of pansies; let any one try the difference of keeping the more marked varieties by themselves, and then the next *colour*—not the name, for names spoil all their real beauty—and so on by shades or distinct colours, instead of mixing them as they come in, and if he is not a florist of the first water, he will in time come into my views of arranging them. A yellow edging, a white edging, and a blue the same, can easily be made for summer flower-beds by the late dividing of some old plants of vigorous habits, and mixed edgings for neutral beds could also be formed, but it ought to be on some fixed plan. Say, that you can make out nine or ten well-marked shades out of an old pansy bed; plant the number in succession according to your taste, and begin afresh on the same arrangement till you get all round the bed; to learn how to do this to the best advantage, and to suit one's own taste, the

best way is to gather a few single flowers from a whole collection, then to stick them in the ground, or in rows in a box of sand or earth in-doors, and to shift them about until you are satisfied with the arrangement. Then number your shades from one to ten or twelve, or less or more, as the case may be; then take up number one and prove it with the plant from which it was picked, and mark that plant number one, and so on with all the rest; and if you take care of the number sticks, you can, at any future period, hit on the succession of shades whether the plants be in bloom or not; and a still easier method is to plant one plant of each colour or shade in a row in some border by themselves, for stock plants to get cuttings from, or to be divided another year. In this way there would be no use for number sticks or tallies. *Chrysanthemums*, *Asters*, *Phloxes*, *Hollyhocks*, *Pentstemons*, *Potentillas*, and a hundred other sorts, are thus arranged by some gardeners for stock, to save them trouble, and to avoid the chances of losing or mixing the tallies or number sticks. All that one has to mind is from what end of a row the planting commenced, and that, of course, would be entered in a book or catalogue kept on purpose. Every one keeps some kind of garden book, and in large places the garden book is kept as correctly as the trade account books. That portion of our garden book which refers to the flower-garden is thus arranged. Every bed and group of beds, with the borders, &c., is marked in outline on successive pages, and every bed is numbered, or has some particular name, the opposite page being left blank for making notes on, and for entering the names of the plants that are to occupy each bed next year. Then a duplicate is made, one for the gardener, and one for the artist who designs the compositions. A fresh set of these duplicates are made every year, and the old ones are carefully preserved for reference in arranging the new ones.

Now, it does not matter much where the artist is when the new arrangement is made, whether in London, Paris, Rome, or "in the country;" all that is requisite is to write home that such and such numbers should be planted with such and such plants, or even with such and such colours; that it is desirable to have the whole in their best garb from such a time to the end of the season. People who sit down at their leisure to write long letters about short matters, can have no idea what can be done on a single page of small post, if done systematically and to the point. D. BEATON.

GREENHOUSE AND WINDOW GARDENING.

ONE-SHIFT SYSTEM OF POTTING.—Many inquiries having been made respecting this subject, I shall endeavour to redeem various promises, by shortly explaining the subject.

1st. The peculiarity of the system may be said to consist in giving a plant in a pot *one large* shift instead of frequent small ones. Thus, instead of moving a plant successively from a three to a five-inch pot, thence to a seven or a eight, and thence again to a ten or a twelve, allowing the roots to become matted at the sides of the pot, or merely to reach there, according as *flowering* or *growing* are the objects aimed at, the plant is moved at once from a three, four, or five-inch pot, into one of eight, twelve, or sixteen inches in diameter. It is seldom that a cutting, or a seedling, or a very small plant, is at once moved into a large one, as during its *very* small state it can be more safely, easily, and economically attended to in a small pot. Indeed, in all places of limited extent, and where the most has to be made of the room, the large shift system would at first, until the plants got a good size, be very unattractive, owing to the

appearance of great lumbering pots, with but lilliputian plants in them; hence, when it is attempted, present appearance must be sacrificed to ultimate results. Hence, too, when a fine display is wanted at a particular time, *selection*, rather than *collection*, must be aimed at. It is a great error into which many good people fall, when they imagine that they ought to rival this neighbour in heaths, the other in geraniums, a third in azaleas, a fourth in calceolarias, and another in cinerarias and New Holland plants, when they actually have less accommodation for all these things than their neighbours have for *any* one of them separately; and yet, very likely, they will insist upon having their little house crammed with flowering plants in winter, while their neighbours are content, *then*, chiefly to look at their plants, and feast beforehand upon their coming beauties. Whether for exhibition or otherwise, the obtaining of masses of flower at *particular* periods, in limited space, must often be obtained at the sacrifice of present gratification. On the other hand, the pleasure of always having plenty of bloom in a small space must be secured chiefly by small specimens, and the satisfaction will be more of a general continuous character, in opposition to that which is temporarily dazzling and striking. The one-shift system requires room for its adoption. Striking individual, rather than mere general results, are its characteristics; and, therefore, where a constant show of bloom, and considerable variety in a small space are chiefly desired, it should only be sparingly adopted.

2nd. The chief object aimed at is rapidity of growth, and thus obtaining a beautiful specimen in a much shorter period than could easily be realized by the succession shift system. There are few of our readers but will have noticed the difference in the growth of a geranium, or a calceolaria, turned out in the flower-border in June, and similar plants coddled up in pots during the summer. The chief difficulty, in such circumstances, is to prevent over luxuriance; in dripping seasons, especially, to see that *growth* does not get the better of flowering. By the one-shift system we obtain a vigorous growth, but yet, from being in a pot, luxuriance may be so controlled as not to interfere with the fructifying, or flowering principle. In fact, with the extra care and trouble involved, we obtain the advantage without the disadvantages of the planting out system. That system is so superior over potting where quick growth is concerned, that I have no doubt that the potting off delicate seedlings and cuttings, such as Heaths, Epacrises, &c., will be exchanged ere long for pricking them out in prepared beds, and giving them room as they need it, potting only when it is necessary to establish them for sale, or to be looked upon as specimens. I have had little of such experience with such tender things, but the great bulk of my bedding out plants never see a pot. They are struck in March and April, either in beds or in drain-tiles, and from these they are either at once removed to the flower-beds, or more generally are pricked out previously into preparatory beds, where they can be sheltered by glass, mats, hurdles, &c. A quicker growth is thus secured, and the trouble of potting, and watering, too, almost dispensed with. Unless, in the most favourable circumstances, a check to growth is given *every* time that a plant is shifted from one pot to another. If the shifting is delayed until the roots cluster around the sides of the pot, there will be a constant warfare between the extending and the flowering principle, that will prevent any striking development either way. For the one-shift system, as well as in every other case, where a fine specimen is desired, a young plant must be commenced with that has *never* had its roots matted round the pot. Such a plant will soon overtake one four times its size, but which has several times densely filled its pot with roots.

3rd. The freely growing plants, and whose existence

is short, are the best to commence with. Many of them are best managed upon this system. Wherever rapidity and strength of growth is an object, annuals intended to flower in pots, after being once pricked off into small pots or preparatory beds, and thus established, can scarcely be too soon afterwards transferred to their blooming pots. Where double flowers, as in the balsam, or swelling of part of the flower, as the receptacle in the case of the cockscomb, are wished for, then, as we have previously seen, different methods may be adopted to secure a desired end. Annuals kept over the winter, intended to bloom early in spring and summer, in the majority of cases, should be kept in small pots over the winter, as thus with touchy things, damping off is avoided; and when shifted early in spring, the roots should be gently disentangled. Such plants as Petunia and Verbena, which many like to train and grow in pots, should be transferred to twelve or eight-inch pots, whenever, by any means, a nice bushy little plant can be obtained after the first of March. Soft-wooded plants that bloom upon the current year's wood do admirably upon the one-shift system. *Gloxinias*, though they will stand the succession mode, seldom bloom so fine as when they are transferred at once to their blooming pots, when vegetation has fairly commenced; so also with the much-loved Achimenes, they will stand successional shifting, but we have always had the finest flowers the less they were disturbed. It is seldom that a pot consists merely of a single scaly tuber; several, from four to a dozen, are generally put into each pot, and as they do not come up with equal strength, it is advisable to start them first in shallow pans, until the shoots are one or even two inches in length, when those uniform in strength may be selected, and transferred at once to their blooming pots; the size of the pot being according to the grower's fancy, from eight to twelve inches being a medium size, which will grow the most of them to great perfection. As we said the other week, the smaller the pot, other circumstances being equal, the sooner will bloom be obtained; but the character of the bloom is something, and the beauty of luxuriant glossy foliage never constitutes a drawback. With such hard-wooded plants as Heaths and Epacrises, the most striking results are obtained by the one-shift system; but as greater care is necessary to success with such plants, we would advise young beginners to try some of the above soft-wooded plants in the first place, and to keep in view for all the cases they may try, whether the plants be soft-wooded or hard. R. FISH.

(To be continued.)

HOTHOUSE DEPARTMENT.

EXOTIC ORCHIDACEÆ.

ORCHIDS THAT THRIVE WELL IN POTS—(Continued from page 10).

GOVENIA FASCIATA (Bundled G.); Mexico.—Sepals and petals bright yellow, marked with bands of crimson: lip lemon-coloured. A fine species, but we are afraid it is lost, at present, to this country.

G. LILIACEA (Lily-flowered G.); Mexico.—The whole flower is of a yellowish-white ground, striped with purplish red. A fine species; the flower-stems grow two feet high, and the flowers are very handsome 42s.

G. SUPERBA (Superb G.); Mexico.—This species produces flowers on a strong upright stem of a rich orange colour. In addition to their great beauty they have the advantage of a delicious perfume. 42s.

Culture.—This is a genus of terrestrial orchids very desirable, and not difficult to grow. They are found on the plains of Mexico, where the heat is excessive, and, during the season of growth, the rains most abundant

These two circumstances naturally direct the cultivator how to proceed.

Soil.—Sandy fibrous loam, and half-decayed tree-leaves, in equal parts, and thoroughly mixed, form a light rich compost suiting these plants exactly.

Potting.—Let the pot be well-drained in the usual way, and proceed to pot the plants by turning them out of their old pots, shaking off gently all the old soil; then fill the new pots so as to allow the pseudo-bulbs to be just covered; work in with the hand the compost round the bulbs, and press it rather firm; give a gentle watering, and place them in a hot, damp stove, pretty close to the glass. They will not require much water for the first three weeks or a month, but when they put forth new roots and shoots they must have a more liberal supply. When the flower-stems or leaves have attained a considerable strength, and the roots are in active operation, then pour on the water abundantly, but see that the drainage is perfect, that the water may not lodge in the soil too long; for, if it does, the soil will become soddened and sour, and the tender ends of the roots will perish, the leaves will turn yellow, and the new pseudo-bulbs, instead of being larger than those of the previous year, will be much less. Should the same misfortune happen another year, the bulbs will ultimately perish. This shows the necessity of *perfect drainage*, and applies to plants generally, as well as orchids. When the growing season is over, which may be known by the size of the new bulbs, and the decaying of the flower-stems and leaves, the supply of water must be gradually lessened; and when the leaves are quite dead, no more must be given, and the heat must be lowered considerably, so as to induce a state of rest. The growing season should extend from March to September; and the resting period through the remainder of the year.

GRAMMATOPHYLLUM MULTIFLORUM (Many-flowered G.); *Manilla.*—Sepals and petals brownish, margined with green; lip yellow, with rich brown spots and stripes. This is a noble plant; the flower-stems rise to the height of two feet or more; they are much branched, and the flowers are large and numerous, thus rendering it a truly fine object. The finest plant we believe in cultivation belongs to H. Schroeder, Esq., of Stratford Green. It has numerous shoots, and last year produced two magnificent flower-stems, each bearing more than a hundred flowers. Very desirable. 63s.

There is a variety named *G. multiflorum tigrinum*, and a fine one it is, but unfortunately very scarce. The sepals and petals are light green, clear and bright, spotted with reddish-brown; the lip is yellow, variegated with rich scarlet. It cannot, however, be purchased at present.

G. SPECIOSUM (Showy G.); *East Indies.*—A noble plant which has hitherto baffled the utmost skill of cultivators to make it flower; neither have we any account from collectors of their having seen it in flower in its native localities. We have seen plants of it more than six feet high in several collections, but none have as yet flowered, though, for the purpose, the utmost skill by the best cultivators has been put into requisition. We should recommend to our fellow-labourers a great diversity of treatment; liberal supplies of heat and moisture when growing, and a more severe treatment when at rest. No doubt, from the grandeur of the plant, it is a splendid object when in bloom. We have suggested to one eminent cultivator, who possesses two very fine specimens growing in large pots, the experiment of planting it out in a bed heated with hot water; growing it freely by means of bottom-heat, and a high degree of moisture; and then taking it up, hanging it from the roof, giving no moisture for three or four months, till every leaf turns yellow, and the plant, in appearance, almost dead; then, in the spring of the year, planting it out again, and subjecting it to a

repetition of the same bottom-heat and moisture. This experiment is certainly worth trying, and we have not much doubt would end in causing the plant to bloom.

HOULLETTIA BROCKLEHURSTIANA (Mr. Brocklehurst's H.); *Brazil.*—Sepals and petals rich brown, spotted and striped with chocolate; lip pale yellow, thickly spotted with beautiful light purple. The flowers are produced on stems, rising from the base of the pseudo-bulbs, two feet high. Each stem, when strong, bears seven or eight flowers, each flower measuring three inches across. This description will convince our readers that this is a very fine species, especially when it is added that the flowers emit a powerful, agreeable fragrance. 31s. 6d.

H. VITTATA (Ribbon H.); *Brazil.*—Sepals and petals yellow, distinctly striped with chocolate; lip yellow, also striped with rich orange. This, also, is a fine species of great beauty, but rare. 84s.

Culture.—During the time we had the charge of the orchideous plants belonging to Mr. Brocklehurst, we had the pleasure of flowering, for the first time in England, the first-named species. We cultivated it in a basket hung up to the roof, thinking it was a plant that would flower in the same manner as a *Stanhopea*, or a drooping species of *Peresteria*. It proved, however, to be neither, but a new genus named by Dr. Lindley *Houllettia Brocklehurstiana*, in honour of a French botanist, Houllet, and Mr. Brocklehurst. It is now found to grow and flower best in a pot. Though a native of the Brazils, it does not require the hottest part of the orchid house. When growing, 70° to 75° by day, and 65° by night, are the right temperatures. When at rest, the heat need never exceed 60° by day, and may be allowed to fall down to 50° at night.

Soil.—Rough fibrous peat, with all the fine parts sifted out of it, two parts, and chopped sphagnum one part, with a due admixture of pieces of charcoal and broken potsherds. This is a suitable mixture for great numbers of orchids.

Potting.—The time for this important operation is when the plants begin to grow, which generally happens, if the plants are rightly managed, in March. When growing, keep up a moist atmosphere, and water freely, especially when the new growths are half made. The growing season should extend to the end of September, and then the resting season must commence; all water should be then withheld, but a degree of moisture should still be kept up in the air till mid-winter, and then even that must be discontinued, the object being to give a certain absolute rest without the pseudo-bulbs and leaves shrinking too much.

HUNTLEYA MELEAGRIS (Speckled H.); *S. America.*—63s.

H. VIOLACEA (Violet-coloured H.); *Guiana.*—At page 199, of the 3rd vol. of *THE COTTAGE GARDENER*, under the head "Orchids requiring peculiar treatment," the description and culture of these plants is mentioned, and therefore we need not repeat it here.

LACENA BICOLOR (Two-coloured L.); *Guatemala.* Sepals and petals greenish yellow, the petals are striped with three violet stripes; the lip is white, with a purple blotch in the centre, and a few spots of the same colour. The flower-stems spring from the base of the pseudo-bulbs; they are frequently two feet long, and the flowers are thickly placed upon them. It is a desirable plant. 42s.

The cultivation of this plant is the same as that above described for *Houllettia*, excepting the plants must be potted high, to allow the flower-stems to issue out above the rim of the pots. They must either be allowed to hang down over the pots, or they may be supported horizontally with sticks. The latter method shows off the flowers to the greatest advantage. T. APPLEBY.

FLORISTS' FLOWERS.

AURICULAS AND POLYANTHUSES.—These beautiful early spring flowers will now be in their greatest beauty. Air and shade, when the sun shines, will prolong the bloom. They must now have plenty of water at the root, without wetting the leaves of the former; the latter will bear such wetting better. Now is the time to select the best formed and most distinct coloured flowers to save seed from. Mark all such, but none other. Cut off seed-vessels of indifferent ones. Seedlings will now be flowering. Keep nothing to bloom in a fine collection, excepting such as even the censors at the National Floricultural Society could not help giving a certificate of merit to. Seedlings in the seed-pan sown last August may now be transplanted into a rich compost, singly, supplying them with plenty of water. Seed may be sown now in shallow pans, in a light rich compost, thinly covered, placed in a close frame, and gently watered.

TULIPS.—The sharp nights we have had lately renders protection necessary still. Those who have heeded our instructions about retarding the growths in the mild weather of January, will find now the benefit of that measure.

DAHLIAS continue to pot and harden off. Cuttings may yet be made of rare kinds. Old dried roots may be split into sections two or more bulbs to each, and be planted in the open border at once, giving a shovel-ful of dung to each.

T. APPELBY.

THE KITCHEN-GARDEN.

Should showery weather prevail, after so much mild weather, it is very likely that in many localities the slugs will be found very numerous and troublesome. They should be well attended to without delay; if brewer's grains cannot be obtained, lay, as we have frequently recommended, small baits of new-made bran, by which slugs are easily attracted, and may be easily taken away and disposed off.

Spring cabbage and *cauliflowers* should be duly encouraged by liberal applications of liquid manure. If the whole of the hand-glasses from the cauliflower crop are not required for *ridge cucumbers*, *vegetable marrows*, &c., they may be turned to advantageous account by transplanting *French-beans* under them. The *cucumber* ridge or trench should be thrown out 3 or 3½ feet wide, and to the depth of 18 inches, so as to get well sweetened and pulverized. Into this trench any kind of refuse may be advantageously put at the bottom, taking care that some fermenting materials are well wrought and ready by the 1st of May, and that plenty of good plants are provided and hardened by the same time.

Asparagus.—The present is the season for planting this beautiful vegetable, which is well worthy of attention. Supposing the ground to have been well manured

and trenched, and every means used to get it into a healthy pulverized condition; we set the rows out two feet apart, stretching the line, and drawing with a hoe a drill on each side of it, sufficiently deep for the roots to be extended each side of the little ridge which is thus left between the two drills, and on to which the plants are placed. Their roots being equally divided on each side, nothing more is required than filling up the drills with a hoe or rake, unless it should be considered advisable by those who have old mushroom composition, or other well decomposed manure at hand, to first place some of this about the roots, previous to filling the drills. The plants should be chosen when they have started into growth two or three inches; they should be forked out carefully, and their roots not allowed to get dry after being taken up;—much of the success of a luxuriant after growth depends on careful taking up, in not allowing the plants to get dry, and in careful systematic planting.

Hamborough Parsley.—This is a good season to sow for the main crop of the roots for which this variety is most esteemed. Sow thinly in drills on good ground; thin out to a foot or fifteen inches apart, and regulate the quantity according to the demand. For *curled* or *culinary parsley* of any kind, this is also the best month to sow, in order to get good strong established plants for producing abundance from Midsummer next, until May 1852. Parsley luxuriates in a good rich soil, sweet, and well pulverized, and manure of the strongest kind. Chimney soot, night soil, and guano, we have invariably found to grow it to the greatest perfection, that is, with an abundance of large thick curled branches, or leaves of a dark green colour. Nothing we have tried will command these essentials like charred articles, intermixed with the soil, and soot-water as the main stimulant, applied at the end of summer and early autumn, with the occasional application of liquid night soil or guano. The earth's surface should be at all times kept open by scarifying, and the collars of the plants kept clear from earth, &c., for if smothered about the collar, parsley is very subject to canker, more particularly in wet seasons. Parsley should always be sown in drills a foot apart at least, and the plants, at their final thinning, should be left a foot apart in the rows; care also should always be taken in selecting and leaving those plants that are of the best quality. Parsley will transplant very well, and a few strong roots should always be potted against winter.

Potato ground should have a loose surface maintained by light harrowings, or hand scarifying, or having the surface broken with a long coarse-toothed rake; with us (in Devonshire), the various crops of early potatoes are more healthy and more free from disease than they have been for this last six years; and the foliage and stalks are looking altogether more as they did in former days, previous to the disease appearing.

JAMES BARNES.

MISCELLANEOUS INFORMATION.

OUR VILLAGERS.

By the Authoress of "My Flowers," &c.

WHAT a sweet and pleasant sound is the Sabbath chime of village bells! They have been silent during the whole of the six days toil; but when the "Lord's Day" returns, and the villagers are enjoying the rest that its presence gives, then the sweet chimes prepare them for going "into the house of the Lord," and call them together to join in the happiest work of all—that of prayer and praise! Happy is the village whose inhabitants do most generally and joyfully obey their call.

But in all villages, alas! men will be found, and women too, who disregard their Christian privileges, who think nothing of the blessing of public worship, of the glad and glorious message which the "ambassador of Christ" proclaims, of the value, beyond price, of Sabbath rest and Sabbath employments; for what rest can be so sweet to the soul, to the weary care-worn mind, as diligently fulfilling those holy and happy duties, which more particularly belong to this "delight," this "honourable" day. Some will sit drowsily by the

smouldering embers; some will go idling about to see their "friends," forsaking the presence of their best and dearest Friend in heaven; and some will spend the sacred hours in Satan's court—the beer-house. Ah, let us look back to the days when Christians hid themselves in caves and holes of the rocks, that they might worship "in spirit and in truth," and let such recollections quicken us to value and use the glorious freedom we now enjoy with increasing earnestness! We have long rested peacefully beneath the shadow of Almighty wings; the standard of our Lord has waxed gloriously above our heads, and our "Captain," "with a drawn sword in his hand," has guarded the white cliffs of our British Zion from every foe. But we may grow cold, and careless of our inestimable mercies; and the day may, alas! come, when we shall sigh and cry for the abominations done in our land, and mourn over the slighted privileges and neglected opportunities that we enjoy no more.

Not many years ago, there stood, close to the church-yard gate, a baker's shop. It changed its inmates; and the new possessor, after continuing for some time to carry on that trade, turned half the premises into a beer-house also. They were people of active habits; and Joseph K—— was supposed to be a man of substance; but with all his "getting," he did not "get understanding," for he *never went to church*. The noise and uproar that frequently took place at his house was great; it was the resort of "navies," who were then constructing a rail-road, and for whose benefit it was surmised that this new pitfall was principally dug; and although, after that fraternity passed away, things were quieter than they had been, yet it still remained a beer-house, and as such, a crying evil in the land.

One day, about twelve o'clock, a thin vapour was seen to rise from the thatched roof of this baker's shop. It was noticed, and an alarm was given;—the house was on fire! In a few minutes ready hands tore away the smoking thatch; the fire-engine played vigorously upon the spot, and hope was entertained that the mischief might be averted; people flocked to the scene of alarm, and all that could be done was vigorously tried. But it was soon found that the flames could not be checked; the slight building must perish in spite of every effort.

Oh, what a scene of horror is a fire! The crackling of the burning materials, the dense smoke, the terrible aspect of the flames, literally *licking up* all before them, the burning flakes flying about, the roaring of the fire, the shouting, the distress, the ruin of all around, and the impotence of man to overcome the furious element! It gives us a faint and feeble idea, with all its terrors, of that "day of God, wherein the heavens being on fire shall be dissolved, and the elements shall melt with fervent heat."

A double row of people extended to the river side, conveying a continual line of buckets to supply the engine; the vicar himself laboured, and directed the labours with his powerful arm and trumpet-voice; but all was vain! Bread, and beer, and clothes, and furniture, fed the devouring fire, and in two short hours there was nothing left but one trembling, blackened wall, and a heap of smoking ruins.

It was an awful warning. The walls that had echoed the vain songs and unholy language of the poor benighted frequenters of the beer-house, had fallen, in one unexpected moment, like those of Jericho; the very beer itself was consumed before their eyes, and scarcely an article was preserved, although the fire took place in the middle of the day, so rapid and violent was its progress.

Joseph K—— in a few months time took another beer-house in a neighbouring parish. It bore, indeed, the dignified name of an inn, but it was to all intents and purposes a "pitfall," and had been just rebuilt, after having also been destroyed by fire. Here K—— remained a year or two, but in a decaying state. He had been deaf to the voice of the fire, and his worldly prosperity deserted him. He became quickly involved, got into debt on all hands, and was at length obliged to give up the "inn," and get on, no one knew how. Then he took again to baking, and he is now once more the conductor of a new "pitfall," but not in *his own* name, lest his creditors should seize upon his effects to pay themselves.

At this solemn, yet joyful season, when we celebrate the dying love, and the risen glory of our great Redeemer, let

us pause awhile, and examine our own state before God. Let us take warning from the story of Joseph K——. We may not keep beer-houses; we may not turn our feet *entirely* from God's Sabbath service; yet we may learn a wholesome lesson. Do we "walk after the imagination of our own evil hearts?" Are we "doing our own ways, finding our own pleasure, and speaking our own words" on the Sabbath day? Are we making it serve *two ends*? Are we wickedly and ruinously trying to obey *two* masters? If so, our spiritual state is no better than that of Joseph K——. We may not, as yet, have been answered "by fire;" but we are provoking God's wrath, and we may be bringing down upon our own heads yet swifter destruction.

There is great carelessness in some places as to the manner of spending Good Friday. It is the most solemn day in the Christian's calendar; and should be most strictly revered. On this day, the redemption of man was fully wrought out, the cleansing blood was shed, the mighty price of souls was paid, the warrant of our "hope," was signed and sealed. And shall we regard this day, when the veil of the temple was rent in twain, a *common* day? I cannot bear to see carts and men at work, and the business of life going on unconcernedly, at the very time when the sun's light was darkened, and the insensible earth itself quaked beneath the stupendous work of man's salvation, as if *we* had no part or lot in the matter!

Let the *cottage gardeners* set a bright, though humble example of reverence for holy days and things. Let them set their faces as flints against what is evil, and range themselves boldly on the Lord's side. The days are at hand when a choice *must be made*. How long shall "we halt between two opinions? If the Lord be God, follow him; but if Baal, then follow him."

PARIS FLOWER MARKETS.

I SAW the Aster last autumn, exhibited for sale in the flower markets of Paris, in greater perfection than I have yet seen it grown in England. They were brought in pots of all colours, not with lateral or straggling branches upon them, but with strait stems, and surmounted with tufts of flowers, well up in the centre, many of them as large as dahlias; these pots were readily purchased by the Parisians, to ornament their shop windows, sitting rooms, halls and saloons.

Another point in which the French appear to excel us, was the tasteful manner in which the market women exhibited their bouquets of cut flowers; these were made on the spot, and when composed of dahlias, were mostly of a dome shape, the flowers appearing in different coloured circles, and so placed as to reflect each other's beauties; sometimes the circles were horizontal, sometimes vertical; but whether the nosegays were formed of dahlias, or of a mixture of smaller and more tender flowers, as the verbena, geranium, &c., the same attention to contrast of colour prevailed, and all were placed in a neat white paper envelope. "Thank you," said a lady to me, as I handed her one of these bouquets, on her alighting from the Railway carriage at Tonbridge, "I brought that from Paris, to shew my friends how much better they manage these things in France."

S. P., *Rushmere*.

HOW TO MAKE ASPARAGUS BEDS.

FOUR feet beds; plant a foot apart, and leave one foot outside. Three rows; rich sifted mould, eight inches; three year old plants; keep roots horizontal. When plants come up, weed them well, and pick off all the berries to prevent exhaustion. Do not cut first year, and second sparingly. Plant end of March; dig three feet, if clay, and put brick rubbish eight inches; then mix all the way up dung with the earth, and on the top a fine soil; strong dung the better, as Asparagus is a gross feeder. Urine is excellent, and salt in March gets giant Asparagus, and, with a little attention at first, the beds will last fifty years.

A. J. V.

RESULTS OF BURYING BEES.
WINTER 1850—51.

In continuation of the Reports, commenced at page 12, we have to add the following :—

Number of hives and description of them; whether swarms, casts, old hives, or preserved bees.	Probable age of queen. Has she ever led off a swarm?	Whether buried in the ground, or in leaves, or otherwise, and at what depth?	What method of ventilation, if any, was had recourse to?	Date of interment, and state of weather.	Weight of contents of each hive on interment, as far as could be ascertained.	Nature of soil, and what aspect. (North best.)	General character of the winter.	Date of disinterment.	Condition of hives on disinterment.	Weight of contents on disinterment.	Perceptible loss in weight of each hive.
One hive; preserved bees from a stock which had swarmed twice.	About five months.	In leaves.	A gutta percha tube, of rather more than half an inch diameter, flattened at the end, inserted into the hive sufficiently to prevent the egress of the bees; secured at the mouth of the hive with mortar.	November 13th, afternoon, foggy, and cold.	12½, not including the bees.	Placed in a pigsty, in a dry situation, under a north wall, open to the east. The hive and board were set on two or three large flat stones.	Mild, damp, and foggy.	March 22nd.	About one third of the bees dead, and the stench from the interior foul.	5½ lbs. exclusive of bees.	7½ lbs.

FURTHER OBSERVATIONS.—The hive was buried to a considerable depth in leaves, which had been well dried previously, and were still quite dry at the time of disinterment. The mortar with which the gutta percha tube had been secured had begun to crack, and had then afforded egress to a few bees, which were lying dead about the mouth. Two or three bees had also contrived to force themselves into the flattened end of the tube, which may in a great measure have obstructed the passage of air. This may have in part caused the disaster; but I am by no means in favour, even supposing it may be so accounted for, of interment of hives in leaves. I think it might answer well in a very severe winter, but cannot conceive that it ever would in a mild one; and as it is only possible to judge the character of the winter very generally beforehand, this mode of wintering bees would always be attended with considerable risk. I examined the interior of the hive, and found one side completely covered with dark-coloured evacuations. The surviving bees also exhibited a most deplorable case of dysentery. Many of them came out of the hive both on the 22nd and 24th, and everything in the vicinity of it was covered with dark spots. I have serious misgivings as to the ultimate fate of the stock.—J. W. KNIGHT, *Weston Favell, Northampton.*

Description of hive.	Date of interment.	How and where interred.	State of weather when interred.	Age of Queen.	Weight of hive when interred.	Weight of hive when disinterred.	When disinterred.	State of hive when disinterred.	Consumption of food.
A swarm in a flat-topped straw hive. The swarm was not better than, if equal to, a cast, in consequence of the death of the old queen a few days after the swarming took place. The new queen was not born until about three weeks after the old one's death. Through the consequent delay in breeding the honey season was nearly over before the bees had time to look about them.	15th November, 1850.	The hive (with a bell-glass and zinc trough over the top hole for condensing the confined air) was first surrounded with a jacket of oil-cloth and then with shavings. The whole was buried in ashes sufficiently deep to cover the hive about a foot. A gutta percha tube, of a quarter of an inch diameter, communicated with the outer air. The situation was an area seven feet deep and three feet broad, with a south-west aspect. Protected from the weather by an overhanging balcony.	Buried at 7 A.M. during a white frost. By 10 o'clock of June, the frost was gone and did not appear again for a fortnight.	Born about the 21st of June, 1850.	11 lbs. after allowing for weight of hive, board, bell-glass, trough, and coverings.	8½ lbs. without allowing anything for increased weight through dampness.	23rd February, 1851. Sun shining brightly through the day; wind cold from the east.	The dampness from the stones of the area had risen, and made the ashes for about six inches up quite damp, whereby the oil-cloth jacket was beginning to rot inside and out. This, of course, affected the hive whenever the two were in contact. In another month the lower rounds of the hive would have been worthless. There was half a teacupful of condensed vapour in the zinc trough, in which were about eight or nine dead bees. The float had been inadvertently, and the perforated zinc between the trough and the hive, designedly omitted. The latter, in order that there might be water wherewithal, if the queen desired to breed. There were about 70 dead bees on the floor-board, which was far from dry. The dead bees and the excrement of the others had absorbed everything in the nature of liquid. The combs, as far as could be judged, were quite dry and clean. The mortality does not seem greater than it is in ordinary cases.	<i>Monthly average,</i> 12 4-7 ths. oz. <i>Weekly average,</i> 3 1-7 th. oz. <i>2½ lbs. in 14 weeks.</i>

OBSERVATIONS.—It seems rather difficult to calculate correctly the average consumption of hives, for in two that I weighed monthly, from the 20th of October to the 20th of February, I find that no decrease in weight took place after the 20th of January. As there cannot be any doubt about the consumption having continued, the above fact can only be accounted for by supposing that breeding had commenced, and that the weight of the brood was equal to the weight of the food consumed. Be that as it may, I find that the average monthly consumption of one of the two, during the three months to the 20th of January, was 10 oz.; of the other, 12 oz.; in both cases, as will be seen, less than the average of my buried hive. My unburies hives have been kept quite dry all the winter, have been carefully protected from the rays of the sun, and have had a piece of wood, about three inches square, always standing before the entrance. The bees seemed very glad to get into the open air. Their bodies were very much distended, and by nightfall the appearance of my newly-painted and adjacent hives was by no means improved. The bees continued flying about all day, though but very few inhabitants of the unburies hives thought fit to come out; they have been very active on every favourable day since. Although the directions given in THE COTTAGE GARDENER, as to the times for burying and taking up, have not been exactly followed out, it is hoped that some portion of the above may help to further the object we all have in view. I do not much like my plan; any other that may be more successful, I shall only be too happy to try.—R., 31st March, 1851.

TREES SUITABLE FOR PARK SCENERY.
(Continued from p. 404, Vol. V.)

THE AVENUE.—In our last we mentioned what we thought the most suitable as single specimens, and also how to plant the group or clump; we now come to that feature which of late has caused much controversy in professional quarters—the Avenue; but, as we said at the beginning, our purpose is not to plan, but to suggest the most suitable sorts of trees for the various purposes under notice; previous, however, to doing which, in this case, we will depart a little out of our path, and say a few words on the width, and on avenues in general.

One of the greatest evils attending many avenues that

have been planted during the last thirty years is, that they are too narrow, the boughs of the trees on the opposite sides meeting long before they ought to have done so, or, what is equally bad, encroaching on the intermediate space, so as to sadly confine the carriage-way, wall, or glade, as the case may be, besides giving the trees a cropt or shorn appearance. There are, however, cases in which a narrow avenue is not only in character, but highly recommendable; when that is the case, the trees are expected to intermingle their boughs above, leaving the vaulted archway clear below. There are many beautiful walks formed under such a canopy; and where the terminus affords a good view, or, what is more often the case, some ornamental

object, the interest is increased. But our intention here is not to laud or condemn such objects; but to point out one very common error in the planting, which no after management can rectify, and that is in the width. Where it is intended to have the trees intermingle their boughs, as noticed above, the distance between the opposite rows need not be more than thirty feet, twenty-five would do—and we have seen a very nice walk between two noble rows of columns only twenty feet apart—certainly, we think, thirty feet quite sufficient. Now the case is widely different when we expect to find two rows of full grown trees standing quite clear of each other. Certainly they may interlace with each other in the row, but a considerable space ought to intervene in the centre. When the trees have arrived at their full growth, many unfortunate mistakes have taken place that way; therefore, to make our meaning more clear, we say, that not less than eighty feet ought to be allowed between the corresponding lines of trees, perhaps a hundred feet will be better; but we unhesitatingly state that all the intermediate distances between thirty and eighty feet are bad, and highly objectionable. There may be cases in which an avenue between these two points may be found to look tolerably well, but there are many others spoiled by it; and we have been the more prolix on this point, because various mistakes have often been made by injudiciously planting too narrow or too wide, therefore, we shall take the avenue as forming two distinct features, the broad and the narrow, and at once proceed to the planting.

For the narrow avenue, and when quick growth is wanted, nothing is better than the lime. The Dutch elm, also, is very suitable, and we have seen a very good avenue of the sweet chesnut, while the sturdy oak is, also, very appropriate; but beeches, walnuts, and sycamores, look better standing more apart, their boughs not intertwining in so many fanciful forms as those of the lime, which is, we think, the best of all for a narrow avenue; however, whatever sort is selected, let there be only one; a mixture is by all parties condemned.

We now come to the more spacious avenue; and here we must, also, insist on only one kind of tree being used. We have seen many fine avenues of elm, and its more quick growth than the oak gives it, in some cases, a decided preference; but when the latter is seen to advantage, nothing can be finer. Nevertheless, the beech, sweet chesnut, walnut, sycamore, and even horse chesnut and ash, may be all found in certain localities, and we have seen pollard, maples, and hornbeam, converted into a not despicable avenue. The best way to come to a just conclusion as to which tree to plant, is to notice the kind that thrives best in the neighbourhood, and unless in some very important feature it be objectionable, that will be the best to plant an avenue with.

We are aware that another description of avenue has started into existence during the last few years, which is one of those fancy pinuses of which we have such ample variety. We have seen rows of *Auracarias* promising at some distant day to make a good display. More quickly will the *Deodar* cedar rise into eminence in that way, but we think it is not so well adapted for avenue purposes as the old cedar of Lebanon; while the difficulty of inducing the other pinuses to maintain an uniformity of growth, will, we think, preclude their being extensively used that way, neither should we like to see them; varied, rich, and graceful though they be when seen collectively, yet we can hardly reconcile ourselves to the idea of an avenue being of anything but deciduous trees. A near approach to the house may be of more fancy trees, but our remarks relate to park scenery.

Before leaving this subject, we may add that we are no advocates for more than one row of trees on each side, and they ought to be at intervals judiciously thinned; but when the avenue forms part of a plantation, the rows might be double before commingling with the other planted ground. Little or no pruning is required by avenue trees, unless any very distorted growth have to be removed; nothing else need be done. (To be continued.) S. N. V.

HESPERIS MATRONALIS, OR DOUBLE WHITE ROCKET.

THESE beautiful plants we seldom see in the perfection that they may be grown with a little trouble, and few

plants will reward the amateur better than the three kinds about which I purpose giving the mode I have adopted to grow them; and which, when so grown, have been much praised by all that saw them. I shall suppose the amateur to have some nice healthy plants; then the first thing to do is to get some strong loam, one barrow-load to half a barrow-load of decayed cow's or sheep's dung, and two shovelful of river sand; mix the whole together well, and then you are ready to begin to plant. If you plant them in the border amongst the other hardy herbaceous plants, they will thrive well, and if in a rather shady, damp place, all the better. Turn out for every plant, say one foot square of the old soil, and fill up the hole with the prepared compost, and place your plant in the middle of the compost, rather deep,—give a little water, and a little liquid manure water when they begin to grow vigorously. Thus generously treated, they will bear flower-spikes of eight or nine inches in length. The way we grow them is in a round figure, or clump, prepared with the same compost. We plant the *German*, which is sometimes called the *French White*; which is shaded with a purplish tinge in the centre. This is a strong vigorous plant; indeed, the strongest of all the kinds I have; and twelve inches from them, another row of the same which grows about two feet high; then twelve inches from that, I plant round the *Blue*, of late introduction, which grows eighteen inches high; and twelve inches from that again, we put the *Old Queen*, which grows from twelve to eighteen inches high. I should have said there must be twelve inches between plant and plant. They all come into flower within a few days of one another, and when in flower they are truly beautiful. Whenever the flowers begin to fade, I cut them down to within two inches of the ground, and make cuttings of the flower-stems so far as they are leaved; generally, each stem makes two cuttings. After the old stools have remained a fortnight, they begin to start fresh growth, and I then lift them and divide them into pieces, and plant them in a shady border with decayed leaf-mould and sand in equal parts. The cuttings I plant in a similar place, but I put them in with the spade, and beat the ground very firm to them, and give water now and then, allowing them to remain all the winter till the first or second week of April, when I plant them out. I have succeeded also in propagating them by cutting or splitting them up the middle of the flower-stems so far as there were leaves, and then inserting the split pieces into an eight-inch pot, half filled with crocks, a little moss spread over, and filled with fine sand. Six or eight pieces of the leaf-stalk are stuck in the centre of the pot just to the under base of the leaf, and the point of the leaves are then bent gently round, and sunk half an inch all round the outside of the sand inside of the pot, then press gently round the pot; observe the leaf is not laid flat on the sand, but fixed like so many curls. The organic matter which the leaf already contains, causes little roots to be emitted into the sand in about three weeks, and then a fine fresh bud opens, which will flower the following year. The pots I plunge in the front of a cucumber frame, and water with a fine rose watering-pot every two days. I would not have troubled you with this, but that the *Hesperis* is what every cottager can grow with great ease. We want a yellow and a scarlet *Hesperis*. Are they in cultivation? D. D.

[It is such practical letters as this we wish to receive. Can any one of our readers answer the concluding question? We know that *Hesperis matronalis purpureo pleno* is red; but we do not know of either a scarlet or a yellow variety.—ED. C. G.]

TO CORRESPONDENTS.

*** We request that no one will write to the departmental writers of THE COTTAGE GARDENER. It gives them unjustifiable trouble and expense. All communications should be addressed "To the Editor of The Cottage Gardener, 2, Amen Corner, Paternoster Row, London."

IVY LEAVES (*Ivy*).—These will decay by degrees, and form vegetable mould, but more slowly than leaves with less woody fibres and resin in them. Cutting in ivy by the aid of a knife is much better than by the shears, for all the mutilated leaves turn brown. In cutting ivy with a knife, make each cut towards the wall.

BASKET-BEDS (*A Friend*).—All raised beds in the shape of baskets having handles for climbers across the top, should be planted with a mixture of the best greenhouse long-flowering plants, some of which would require to be replaced two or three times during the season, and to avoid such kinds as are in general use in the beds of the same garden. For basket-like beds without handles, use the regular flower-garden plants—two contrasting colours, and an edging. For baskets with handles always

have the plants in pots plunged in the soil, and covered with moss, except the climbers, to run over the handle, and these should be *Lophospermum*, and *Rhodochiton*, opposite each other in one basket, they having the same kind of leaf, and mode of flowering, and the common *Tropæolum majus*, planted round the sides, to hang down, or be carried in a wreath just outside the rim. The second basket handle to be covered with *Ecremocarpos*, and *Maurandya*, with a wreath of *Convolvulus major*, in sorts, to train round the rim; or the *Convolvulus* to cover the handle, the other two for a wreath, which would be better. If there is not a stock of greenhouse plants to keep the baskets gay, use *Petunias*, *Verbenas*, *American groundsel*, *Calceolarias*, and scarlet and pink *Geraniums*. At any rate, mixtures are more appropriate, for you should carry out the idea of a basket of flowers.

GLADIOLUS SEED (H. W. B.).—It should be sown in September, in two-thirds sandy peat, and one-third light loam; when the seedlings are up, let them have free air all through the winter, whenever the weather is fine; that is, greenhouse treatment till the leaves die off early in summer. February is the next best time, and you may sow now, and keep the seedlings in a cold frame after they are up.

CATALPA SYRINGÆFOLIA (New Subscriber).—This is propagated from American seeds, and from cuttings of the roots, and now is a good time to make them. Take roots the size of the little finger, cut them into six-inch lengths; if you have command of heat, put them into a pot, and try them in heat, or in a close frame, or merely plant them out of doors, burying the whole length, except half an inch. See you do not plant them wrong end downwards. In making root-cuttings of any plant, cut the top end square, and the bottom with a sloping cut, to guard against a mistake of that kind. The *Catalpa* should have free light sandy loam on a dry bottom. The *Paulownia imperialis* comes best from root-cuttings, in heat, and every inch of it grows like a weed. A sunny aspect, a dry bottom, a poor sandy soil, are best for it; but after all it will take many, many years before it will flower well in our climate.

ROSE CUTTINGS (J. D.).—You are too late to get a good strike of roses now, without any artificial help; but on the principle of never venture never win, go to work thus:—Dig out a space on the north side of a wall, ten inches deep, and fill it with a compost of half sand, and half peat and leaf mould, or any kind of light earth, press it down with the back of the spade, then put a little sand on the top, and water with a rose pot; get as many cuttings with "a heel" as you can, that is, slip them from where the shoot began to grow last year; if there are young shoots and leaves made this season cut them off, but not very close. Let the cuttings be from four to six inches long, and plant them very firm, leaving only an inch out of the ground; give a gentle watering with a rose twice a week, or in hot dry weather every other day, and the chances are that you will succeed in rooting ten out of a dozen of them. All the *Chinas*, *Bourbons*, *Teas*, *Noisettes*, and *Hybrid perpetuals*, will root with this treatment, but you ought to begin at the end of October with all the strong ones, and put in the more tender at the end of February, and to shelter this lot with boughs of evergreens stuck in the ground all round them. You are quite right; our new Rose articles are good, and most useful, and we shall continue them.

PEACHES NOT SETTING (E. F. M.).—It is by no means improbable that your peaches, forced early last year, have missed the impulse of heat at the usual time. Peaches seldom do so well against a back wall, and, perhaps, they have been much shaded by vines or other things. Peaches cannot endure shade in the growing season. About your prepared stations, we say go on and prosper; we wish many would do this. One thing observe: try and apply some nice mulching after a nice May rain. Mulching is part and parcel of the shallow border plan.

NAMES OF PLANTS (Viola).—The blooms sent are of a pale variety of the *Viola odorata*, or Common Violet. Of this species there are varieties of all shades of colour, the plants also vary much in their habits. (C. E.).—We should say your's is the liver-coloured variety of the *Primula vulgaris*, or Common Primrose, but as to varieties there are no end to them. They vary much too, as to size, colour, and smoothness or hairiness. We have saved seed from the most choice of the *Polyanthuses* kept entirely away, as we thought, from all its allies, and even then we have had seedling plants of varied colours of the Common Primrose come up among them.

THE COTTAGE GARDENER (J. S.).—Our numbers are always in the hands of the trade on Tuesday, so as to be ready for delivery to the most distant customers on the day of publication.

BOUQUETS (H. P.).—You are not the only person who has applied to us for information relative to the mode in which the beautiful bouquets in Covent Garden are made. It is a trade of itself, and those who follow it are very reluctant to give information. All that we know is, that they tie a long thread to the stem of the flower selected for the centre, apply all the others, one by one, in circles round that centre, but fastening each flower into its place, as it is added, by a twist of the thread round it. We cannot refer you to the passage you require. Thanks for the offer of the seed.

LOUDON'S GARDENERS' MAGAZINE (Cornubiensis).—The reference in the *Suburban Horticulturist* should have been to the volume for 1832, of the above magazine, and this only contains an extract from much fuller information in the 4th volume of the *Caledonian Horticultural Transactions*.

GRASS FOR LAWN PASTURE (D. A. B.).—For a heavy soil, *Alopecurus pratensis* (Meadow Fox-tail), 1½ lb. *Anthoxanthum odoratum* (Sweet-scented Vernal), ½ lb. *Dactylis glomerata* (Rough Cocks-foot), 2 lbs. *Festuca duriuscula* (Hardish Fescue), 3 lbs. *F. ovina* (Sheep's Fescue), 1 lb. *F. pratensis* (Meadow Fescue), 3 lbs. *Lolium Italicum* (Italian Rye Grass), 5 lbs. *L. perenne* (Common Rye Grass), 8 lbs. *Poa nemoralis* (Wood Meadow Grass), 1½ lb. *P. N. sempervirens* (Evergreen ditto), 1½ lb. *P. trivialis* (Rough-stalked Meadow), 2½ lbs. *Lotus major* (Larger Bird's-foot Trefoil), ½ lb. *Medicago lupulina* (Yellow Clover Trefoil or Black Medick), 1 lb. *Trifolium pratense perenne* (Perennial Red Clover), 2 lbs. *Trifolium repens* (White Clover), 5 lbs. The above well mixed are sufficient for a statute acre. *Lucerne* will succeed well on light deep soil, moderately fertile, and well trenched. It is far superior to Italian Rye Grass, because it is a permanent crop, gives five or more successive cuttings annually, and is far more nutritious. Begin applying

liquid-manure to your pasture immediately. Dilute it before application. Five of water to one of your house sewage will be enough. You can have a cover for vol. iv., of our publisher, price one shilling, to match your other volumes. The cover for a year's volume does not match that of the half-yearly.

LATE PEAS (W. B. U.).—An answer to another correspondent in our last number, will have given our opinion as to the best varieties for late crops. For *late beans*, no variety surpasses the *Early Mazagan*. To keep the mildew from these crops is very difficult, but it may be effected by growing them on a south border having a rich soil; some mulch over the roots on each side the rows, and keeping the soil well soaked with water during dry weather.

WATERING (A. J. V.).—Do not water onions, peas, beans, carrots, or parsnips, on your clayey soil—but to cabbages and cauliflowers you cannot give too much in dry weather. Do not water your fruit-trees, except those newly planted, but it is a good plan to have some mulch buried an inch under the surface of the soil, in a circle, beginning about two feet, and ending at six feet from the stem. Water strawberries plentifully between the rows, from the time of blooming until beginning to ripen their fruit. More injury occurs to *asparagus* by cutting off the stems whilst green, than by allowing them to ripen their berries. To strengthen them, have the berries picked off while green. How to trap woodlice. See page 362, of last volume.

DAHLIA PRICES (Scattergood).—The prices we affix to the different plants we mention, are the prices usually charged by the trade. We have no connection with any one engaged in that trade, and we know of no reason why you should not get good plants of the same varieties at lower prices. You will have seen directions for striking *Rose cuttings*.

AUCTIONEERS (J. B. W.).—Apply to Messrs. Puttick and Simpson, 191, Piccadilly.

HINTS TO COTTAGERS (H. D.).—We have no intention at present, to publish these separately.

PETUNIA (A Parson's Wife).—It is quite possible that your variety, which has passed through our late mild winter without protection, and continued blooming in the first week of this month, may be hardier than *Petunias* usually are. We certainly recommend you to strike some cuttings of it.

GEOMETRICAL DRAWING (B. C.).—Loudon's Self-Instructor will perhaps suit you; but there is no work exactly giving what you require. We cannot write private letters.

RAISIN WINE.—"I have a recipe which I know to be good, and not only good, but cheap, and easy to be made. Get a clean sweet cask, double the size for the quantity required—that is, if you want 14 gallons of wine you must have a 28-gallon cask; take of Malaga raisins, as they are sold (*stalks and all*), in the proportion of 8 lbs. of fruit to every gallon of water (*spring water*, cold); chop or bruise the fruit, put it in the cask, and pour the water on it (*cold*); leave the bung out for a month, stirring it frequently, then bung up close, and let it remain quite still in a dry cellar for eighteen months (two years will make it better), when you may set another cask under and draw it off; let it stand a few days, when it will be clear and fit for use. Do not be alarmed if it looks thick or colourless at first, for it will gradually improve by age; indeed, we have some by us now, three years in bottle, as strong and as brown as some brown sherry. You may put 1 lb. of Smyrna raisins and 7 lbs. of Malaga if you wish for colour."—Henry.

THE SQUIRREL (N. S. H.).—Can any of our readers answer this question:—"Some years since I had a favourite lime-tree much disfigured by the squirrels peeling the bark off the branches early in spring. Can any of your readers inform me to what purpose the strips were applied by the animals, who rolled them up and decamped with their spoil?"

GERANIUMS—NOT SCARLET (E. S.).—You require these cheap, and fit for windows and sitting-rooms. Almost all will do if well managed. The following are easily grown, old, and cheap, and good things besides: *Hebe's Lip*, *Isabella*, *Zenobia*, *Zanzummin*, *Bridegroom*, *Alicia*, *Alba multiflora*, and *Alexandrina Victoria*. Sweet-scented-leaved ones—*Prince of Orange*, *Citridora*, and various *oak-leaved* and *cut-leaved* kinds, of which the pretty leaves are the main attraction, in which group may be placed the beautiful purple, crimson *Unique*, which is always in bloom. Fancy kinds—*Jehu*, *Jehu Superb*, *Statuiski*, *Nosegay*, *Yate-manium superbum*.

WHEN TO STRIKE GERANIUM CUTTINGS (Ibid.).—From young shoots now, if you can command a little sweet bottom-heat; or from older wood in summer and autumn—see several articles bearing on this subject lately. Geraniums should be cut down when done flowering, and the wood is ripened. Sandy loam and leaf mould, or sandy loam will do of itself for geraniums.

BEGONIA COCCINEA (A Florist).—We are glad you found the directions, Jan. 9, page 234, suitable; and now, as the stalks are twenty inches long, we would stop them when done flowering; but if you have plenty of room, we would only take a few inches off the centre shoots, cutting them all down so as to give the whole plant a conical appearance. Did we want a monster specimen, we would merely shorten the shoots a little, tie the lower tier horizontally with the rim of the pot, and the others in proportion. Each shoot would thus break into two or three, or more. Shift the plant after the new shoots begin to push; your own judgment must tell you whether to shift at once or several times—we incline to the first;—see several articles lately. A cool stove will suit it during the summer, and until growth has been completed; a warm greenhouse would then do for a time.

CITRUS JAPONICUS (Ibid.).—This, now growing in bottom-heat, should at this time be inured to more air and exposure by degrees, and may be taken into the greenhouse in May or June.

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WEEKLY CALENDAR.

M D	W D	APRIL 24—30, 1851.	WEATHER NEAR LONDON IN 1850.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bef. Sun.	Day of Year
			Barometer.	Thermo.	Wind.	Rain in In.						
24	Th	Wild Cherry blooms.	29.894—29.704	56—43	N.	—	48 a. 4	8 a. 7	2 34	23	1 53	114
25	F	St. MARK. PRINCESS ALICE B. 1843.	29.745—29.728	62—44	W.	0.03	46	10	3 3	24	2 4	115
26	S	[DUCHESS OF GLOUCESTER B. 1776.	29.836—29.724	60—29	N.W.	0.01	44	11	3 26	25	2 14	116
27	Sun	1st. AFT. EAST.—LOW SUNDAY.	29.838—29.650	61—40	S.	0.04	42	13	3 48	26	2 24	117
28	M	Cabbage Butterfly seen.	30.000—29.681	59—32	W.	0.28	40	15	4 8	27	2 34	118
29	Tu	Large Tortoiseshell Butterfly seen.	30.260—30.176	68—45	S.W.	—	38	16	4 28	28	2 43	119
30	W	Oxford and Cambridge Term begins.	30.284—30.208	66—35	E.	—	36	18	4 48	29	2 51	120

So rare are the instances of more than one in a family attaining to excellence, by the exercise of his mental powers, that the commentary—"One child runs away with all the wit of the family," is almost established as a proverb. But it is a rule to which many splendid exceptions might be cited, and among them are the Knights of Downton. Last week we gave a brief memoir of Richard Payne Knight, and to-day we will pay a similar tribute to his brother, THOMAS ANDREW KNIGHT, to whom, more than to any son of the current century, gardening is indebted for its elevation into a science. There was a glimmering of knowledge in the earliest ages, that the seed of fruit might be injured by its being grown in neighbourhood with that of a worse quality (*Jeremiah* ii. 21; *Deut.* xxii. 9); and, passing over the dreams of the intermediate centuries, in 1626, we find Lawson in his *New Orchard and Garden*, recommending "the kernels of the best and soundest apples and pears to be sown, and to save the likeliest plants;" yet, anything approaching to an enlightened attempt at an improvement of varieties by inter-impregnation, never entered the mind of man, until Mr. Knight addressed himself to the pursuit. In a letter he wrote to us in 1828, he says:—"I was early led to ask whence the varieties of fruit I saw came, and how they were produced; I could obtain no satisfactory answer, and was thence first led to commence experiments, in which through a long life of scarcely interrupted health, I have persevered, and probably shall persevere as long as I possess the power."

How well he succeeded, and how much we are indebted to his labours, appears from the following list of the new varieties of fruits and vegetables raised by Mr. Knight, which he considered worth preserving:—*Apples*—Spring-grove Codling, Downton Lemon Pippin, Herefordshire Gillyflower, Grange Apple, &c. *Cherries*—Elton, Waterloo, and Black Eagle. *Strawberries*—Elton and Downton. A large and long-keeping *Red Currant*. *Plums*—Ickworth Impératrice, and two improved Damsons, *Nectarines*—Impératrice, Ickworth, Downton, and Althorp. *Pears*—Monarch, Althorp Cressane, Rouse Level, Winter Cressane, Belmont, and many others. Many excellent and productive varieties of *Potatoes*, of which the only one named is the Downton Yam. The Knight *Pea*, and improved varieties of *Cabbage*.

The originator of these great additions to our garden harvests was born at Wormsley Grange, on the 12th of August, 1759, and was but five years old at the time of his father's death; and his early education, like that of his brother, was much neglected. However, after a little tuition at Ludlow, he was removed to a school of considerable reputation at Chiswick, then kept by Dr. Crawford. He was afterwards entered of Balliol College, Oxford, where the late eminent physician, Dr. Baillie, was his contemporary: who used to say of him, "that he managed to acquire as much Latin and Greek as most of his fellow-students, though he spent less time about it, and much less than he devoted to field sports." He was at this period, and continued for many years afterwards, to be an eager sportsman, and an excellent shot; but with him, even in his boyhood, killing the game was only a secondary consideration to the opportunities which his long rambles with his gun afforded him for studying nature; and from the facts and incidents collected at this early period he laid in a fund of information which formed the basis of many of his subsequent investigations. He was at this time painfully shy, and it was difficult to draw him out; but he was remarkable for the steadiness with which he resisted all attempts, whether by persuasion or railery, to join in the intemperate habits then so common in the Universities.

In 1791, Mr. Knight married Frances, the youngest daughter of the late Humphrey Felton, Esq., of Woodhall, near Shrewsbury. The gentleness of her disposition, and her unceasing endeavours to promote his comfort and happiness during the forty-six years they were permitted to spend together, secured to her the affections of a heart so calculated for the reception of the endearing ties of domestic life, as that of Mr. Knight; and the pain of separation was softened to her by a recollection of the uninterrupted harmony in which this long interval was passed. On his marriage, Mr. Knight established himself at Elton, in the immediate vicinity of his mother's and brother's residences; the acquisition of a hothouse and a farm now enabled him to prosecute his experiments in horticulture and agriculture with more advantage than heretofore. His income, as a younger brother, was at this time limited, and it was astonishing how much he did to advance the science of horticulture, with a garden and an establishment of the least expensive description; but one of his peculiarities was, the readiness by which, with his own hands, and the assistance of a common carpenter or blacksmith, he would construct all the machinery he required for conducting his most elaborate experiments. About this time Mr. Knight became acquainted with Sir Joseph Banks; and this introduction had so important an influence on his future proceedings, that it should not pass unnoticed. It occurred in the following manner:—The Board of Agriculture had drawn up a set of queries, to which they desired to obtain answers from different districts; and an application had been made to Sir Joseph Banks, to recommend persons properly qualified, to whom the queries should be addressed. Sir Joseph referred to Mr. Payne Knight to recommend some one for this purpose in Herefordshire; who mentioned his brother, as more likely than any one he knew to fulfil the object in view, from his practical knowledge of the agricultural operations of that part of England, as well as from the attention he had given to its natural history. This introduction to Sir Joseph gave wings to his advancement through that realm of science whither he directed his course. At Sir Joseph's house he had occasionally opportunities of comparing his own observations and

theories with those of many of the most celebrated naturalists of all countries; and it would probably have been advantageous to him had those interchanges of information and opportunities for discussion been more frequent, for it would have saved him trouble in working out facts which cost all the labour and time of original discoveries, and which labour would have been more profitably employed in building on the substructure already laid by other hands. He for some years purposely avoided to read the works of his precursors in the field of vegetable physiology, from an idea that, by the study of nature, unbiassed by the opinions of others, he should be most likely to arrive at truth; but he was at length induced to deviate from this course by the advice of his friend Sir Joseph. Mr. Knight's first communication to the Royal Society, was a paper "Upon the inheritance of decay among fruit-trees, and the propagation of debility by grafting," read April 30, 1795; and, in 1797, he published a "Treatise on the culture of the apple and pear, and on the manufacture of cyder and perry." In this work he repeated the same opinions which he had advanced in his paper, viz., that vegetable, like animal life, has its fixed periods of duration; and that, however, the existence of a variety of a fruit-tree may be protracted beyond the natural life of the original seedling plant, by grafting, or by unusually favourable circumstances of soil or situation, still there is a period beyond which the debility incident to old age cannot be stimulated; and to this he attributed the cankered and diseased state of most of the trees of the old varieties of cyder apples in the orchards of Herefordshire. In the year 1805, Mr. Knight was elected a Fellow of the Royal Society, and on the 4th of November, 1806, the Copley Medal was voted to him for his papers on vegetable physiology, and presented at the anniversary meeting on the 1st of December following, when Sir Joseph Banks delivered an address expressive of the sense the society entertained of the value of his discoveries. But the time and attention he devoted to scientific pursuits did not divert him from the prosecution of objects which, though less calculated to secure him an eminent rank among philosophers, were gaining him the still more enviable distinction of a benefactor of his country. He had by this time become well known as a practical agriculturist, and an improver of the breed of Herefordshire cattle. The stock of this county had been long distinguished for its superior quality; the origin of this superiority he had taken some pains to discover, and the result of his inquiries led him to attribute it to the introduction from Flanders* of a breed of cattle by Lord Scudamore, who died in 1671, to whom the orchards of Herefordshire were also indebted for the introduction of many of their best apples. In 1804, was established the *London Horticultural Society*. John Wedgewood, Esq., was the first projector, and on the Society being constituted on the 14th of March, 1804, the rules and regulations which had been suggested by Mr. Wedgewood, were adopted. On the 30th of March, a meeting was held for the appointment of an annual council and officers, when the Earl of Dartmouth was elected President, Mr. Wedgewood, Secretary, &c. The first part of the Transactions was published in 1807. It opens with an introductory paper written by Mr. Knight, and also contains another paper from his pen, "On Raising New and Early Fruits;" read November 4, 1806. From this time every succeeding part of the Society's Transactions contain several communications from him. In order to put the Society upon a more firm foundation, and to give it a higher character, both in this and foreign countries, it was determined to obtain a charter, which was granted in April, 1808, and on Lord Dartmouth dying, about the end of the year, 1810, Mr. Knight was elected President on the 1st of January, 1811, and continued to fill that office during the remainder of his life. His residence in the country prevented, indeed, his usually taking a part in the deliberations of the council; but it enabled him more effectually to promote the objects of the Society, by the prosecution of his investigations; and on every occasion where his time or his purse could be made available to its interests, his assistance was always most liberally given. With one or two exceptions, he was present at the anniversary meetings on the 1st of May, till the last year of his life. At the period when Mr. Knight became President, the Society had made little progress; and its rapid increase afterwards, is, in a great measure, to be attributed to Mr. Sabine, who became a member about the same time, and afterwards accepted the office of Secretary, and whose zeal and activity, supported by the reputation of the President, gave a new impulse to its exertions, and enlisted among its supporters not only men of science and practical gardeners, but nearly all the rank and wealth of the kingdom. With the ample means thus placed at the disposal of the Society, information and produce were collected from all parts of the world, and were distributed with unsparing liberality; and by the sound physiological principles taught by the President, and the unceasing activity of the Secretary, a complete revolution was effected in the science and practice of gardening, and a great public benefit was conferred throughout the kingdom, by inducing many in every class of life to employ their leisure hours in an innocent and healthy pursuit. The Society first established a small experimental garden at Kensington, in the commencement of the year 1818; but this being found too limited, and too much within the influence of the London atmosphere, it was determined to select another site, and the present garden of thirty-three acres was taken a few years afterwards, and the stock finally removed there in the early part of the year 1822. The great expence attending the establishment, and keeping up of so large

* In Cuyp's pictures the cattle are usually represented of the Herefordshire colour, with white faces.

a garden, together with the failure of the parliamentary grant, and the royal subscription, both of which the Society had been led to expect, but which it never received, added to some losses which it sustained a few years afterwards, gave a temporary check to its means; but the active support of its many zealous friends enabled it to recover its position, without contracting for a moment the field of its usefulness, and long before his death, Mr. Knight could safely contemplate this Society as a permanent means of applying to the benefit of the community those physiological principles which he had laboured through life to establish. One of the earliest means adopted by the council for promoting the improvement of horticulture, was the establishment of medals as a reward for merit; these were first given in the year 1808, and on the 1st of May, 1814, the gold medal was voted by the Society to Mr. Knight, "For his various and important communications to the Society, not only of papers printed in their Transactions, but of grafts and buds of his valuable new fruits." A few years later, the council thought it desirable to establish a class of medals of a smaller size than the original ones; and soon after the death of Sir Joseph Banks, in 1819, on carrying this resolution into effect, they embraced this opportunity of recording their sense of the benefits the Society had derived from his support and influence, by calling it the Banksian Medal, and placing Sir Joseph's profile on the obverse of the medal. In the year 1835, in consequence of the extensive distribution of these medals, the dies had become worn out; at the same time, the encouragement to horticulturists which they had given had been so manifest, that it was determined to have three dies prepared by one of the first artists of this country. An emblematic representation of Flora, attended by the four Seasons, was selected as the design for the large medal; the head of Sir Joseph Banks was again adopted for the smaller one; and for the intermediate one, the council determined that no device could be more appropriate, and at the same time more acceptable to those whom it was intended to encourage, than a similar profile of Mr. Knight. The die of the Knightian medal was accordingly executed, together with the two others, by Mr. Wyon, and was first distributed to those to whom it had been awarded in the course of the year 1837. At a meeting of the Society held on the 4th of May, 1836, it was resolved, "That the first impression of the Society's new large medal be struck in gold, and presented to Thomas Andrew Knight, Esq., for the signal services he has rendered to horticulture by his physiological researches." In the spring of 1809, Mr. Andrew Knight and his family quitted Elton, and removed to Downton Castle, which Mr. Payne Knight had given up to his brother, having built himself a cottage in the grounds, in which he passed his mornings during the summer and autumn months; the rest of the year he spent in London. He still received his visitors at the castle, and frequently joined the family party at dinner, or in the evening, and the arrangement probably contributed to the comfort of all parties; for while it relieved the elder brother from the trouble unavoidably attendant on a large country establishment to a bachelor, it afforded many advantages to Mr. Andrew Knight and his family.

In 1827, Mr. Knight had to bow beneath a bereavement from his only son, who died from an accidental shot, and the bereavement was the more severe, because he had attained to mature manhood, and was gifted with high mental powers. In a letter to a friend written in the course of the following year, Mr. Knight says:—"I am at present, as I have been for some months, not in a state of mind to attend to, or interest myself about anything. I endeavour all I can to rouse myself into action, and I trust I shall in time succeed; for I know that I cannot long survive in a state of idleness. I cannot but feel consoled and gratified by the interest taken in the calamity of my family by all classes. My son, if his life had been spared, I am confident would have fully justified the favourable opinion generally entertained of him. As a father, he never gave me pain, except when the ardour of his character, and I may say his absolute love of danger, excited very painful apprehensions in my mind. The ways of Providence are hid from our sight, but the rule by which all is guided is

just, and life is at best but an uncertain blessing, and it is, perhaps, weakness to mourn for the dead." To a casual observer a slight appearance of nervous excitement was soon the only symptom that indicated the change this blow had made—but to those who lived with him, and were anxiously watching the workings of his mind, the fearful struggle that was going on within, was painfully apparent; disappointment, nevertheless, never, for one moment, had power to sour the sweetness of his temper, and he seemed to be always trying to fill the blank in his heart, by bestowing, if possible, redoubled kindness and affection upon those who were still spared to him. It was long before he was like himself again; and even to the close of his life, though time had done much by its softening influence to restore his mind to a healthy tone, there had been impressions made under the first overwhelming influence of this blow, which no effort of reason, nor the persuasions of those around him, could ever entirely eradicate.

In 1838, he was visited by Sir G. S. Mackenzie, who thus records the impressions made upon his mind by his host:—"The venerable and talented proprietor of Downton, surrounded by a princely domain of ten thousand acres of rich and beautiful country, thinks of nothing but of what may be useful to his fellow-creatures. He received us with that unostentatious but kindly welcome which displayed the true spirit of hospitality; regarding a visit as a favour conferred on the host, and not on the guest; and which at once excites mutual benevolence, that operates like magic in giving birth to friendship. It is true, we had seen our excellent host once before, and enjoyed occasional correspondence with him during many years. But notwithstanding, on entering a house for the first time, we felt a little awkward, as Scotchmen generally do in such circumstances. In a short time, however, this was brushed off by attention from every side; and we experienced, with much delight the ease, grace, and kindness of English hospitality. Our venerable host, active and energetic in his 78th year as a man of 40, is one of those rarities among men, that know everything—who can put their hand to everything, and give a sound philosophical reason for what they do. He is one who can discern rottenness in church and state, as well as canker in a fruit-tree, and can fathom both. He can see the traps set for the people, as they are closely analogous to those ingenious ones he sets for the blackbirds that come to devour his fruit. He soon introduced us to his garden, which we were most anxious to see. We found no display—nothing for show—all was perfectly simple and business-like, and full of experiment. Various modes of culture were in progress with everything; and reasons were given for commencing every experiment. Were we to attempt describing all that we noticed in a garden at which, on account of its plainness, those who regard show and display would turn up their noses, it would be proper to think of writing a volume. We will, therefore, conclude by stating that Mr. Knight has not yet subscribed to the theory of the rotation of crops derived from the experiments which showed that plants deposited excrementitious matter; the theory being that, while such matter is useless to the plants that reject it, other plants are nourished by it. Further experiments are wanted to elucidate this curious subject; and no one has better means to confirm or overset the theory than Mr. Knight."

For these most interesting particulars we are chiefly indebted to a memoir written by the members of Mr. Knight's family, and prefixed to a volume in which are published *A selection from the Physiological and Horticultural Papers of the late T. A. Knight, Esq.*; and it remains but for us to record that he died on the 11th of May, 1838. "His end was as peaceful as had been the pursuits of his long and useful life; and few men have descended to the grave more beloved or more sincerely regretted by all ranks of society."

METEOROLOGY OF THE WEEK.—From observations at Chiswick during the last twenty-four years, the average highest and lowest temperatures there of these days are 69.8° and 38.5°, respectively. The greatest heat, 80°, was on the 25th in 1840; and the lowest cold, 25°, was on the same day in 1827. Rain fell on 72 days, and 86 were fine.

THE World's Fair is about to commence, and thousands of thousands of the idle, the inquisitive, and the diligent are about to gather, and are now gathering, to one point, from every civilized region of the earth. The timid and the croaking are prophesying of the evils to result from this mingling of nations: but the same minds would have muttered similar forebodings over an intended gathering of Christian men, to celebrate a centenary of the Reformation. We, on the other hand, venture to prophesy, that there will be no such catastrophes as those morbid imaginations have incantated, but that there will be more prejudices broken down, more useful information imparted, and more excitement to emulous exertion diffused during the weeks of THE GREAT EXHIBITION OF 1851, than years could have effected without such a passage of arms in one arena, where the skilful of the whole globe are admitted to contend for the prizes. Excellence has emulation as well as diligence for a parent, and never have both parents been rendered more vigorous than in the endeavour to raise an offspring worthy of tenanting the Crystal Pavilion.

Nor is this all the good that will be effected among our countrymen, for thousands will visit London on this occasion, tempted thither by the Exhibition, and the cheap transmission, who, under ordinary circumstances, would have contemplated such a visit only as a dream of a wished-for land. Nor will these come to the metropolis actuated by the mere idle love of the new and the strange. We know, from the letters before us, of many little schemes and arrangements for acquiring useful knowledge during the visit, which the acquirers are thirsting to carry back with them to their out-of-the-way nooks of our happy land. Many of these schemes embrace the intention of visiting the establishments—the gardens, private as well as public—that may furnish suggestions and specimens for memory to store up, and exertion to imitate in after years; and we will not spare ourselves in our efforts to promote these intentions. "What ought we to see?" is a question in many of the letters we have mentioned, and we cannot employ ourselves better than by furnishing this general answer: First of all we recommend *Kew Gardens* to be visited, not only because there is assembled the best and most

ample collection of plants in England, but because they are far better cultivated—and we speak this to the shame of the Horticultural Society—than in any other public garden near London. The Kew Gardens and their Museum are open every day (Sundays excepted), from one to six o'clock; and the pleasantest mode of journeying thither is by one of the steamboats which take passengers to Chelsea, whence another boat conveys them to Kew, the entire expense being tenpence. We shall not particularise the objects most worthy of notice in Kew Gardens, because a shilling guide, by Sir W. Hooker, may be obtained at the gates.

Although we have held up to reprobation the practice of the Horticultural Society, yet their *Chiswick Garden* will be found well worthy of a visit at any of their three exhibition days, May 3, June 7, and July 19. Here will be then assembled specimens of the best achievements of modern gardening. But visitors must seek for warnings rather than examples in the cultivation of the garden itself. The flower-borders rarely exhibit anything striking, the fruit-trees are diseased and mostly barren, whilst the kitchen-garden is a farce. Some first-rate gardeners were walking round this department last year, and seeing the asparagus beds marked out as under experiment, the simultaneous query was, "But where is the asparagus?" and a similar query would have been applicable to each quarter—"Where is the crop?" This is not as it ought to be; and we say so whilst we gladly admit the benefit the Society effects by its exhibitions, and by distributing cuttings, and other means of propagating new and superior tenants for our gardens.

We have yet to mention some other public gardens, but these must be postponed until next week, and we will conclude to-day with a notice of some of the nursery gardens near London, and that we may avoid even the appearance of partiality, we shall arrange them alphabetically.

AMBROSE, Battersea.—A well-kept nursery. Here are a large number of the best kinds of *Geraniums*, especially the fancy varieties. To such persons as admire this class of florists' flowers, a visit to this nursery will be very gratifying. Three miles from London, by omnibus.

BECK, Isleworth.—A well-known raiser of fine *Geraniums*. The young stock is particularly well grown, as well as the specimens. Ten miles from London; by either steamers on the river, by South Eastern Railway, or by omnibus.

CHANDLER AND SONS, Vauxhall.—This old established nursery is particularly famous for fine collections of *Camellias* and *Chrysanthemums*, especially the latter. Two miles from London, on the Wandsworth-road. South Western Rail, from Waterloo Station to Vauxhall; and by omnibus from the Bank.

FAIRBARN, BROTHERS, Clapham.—This is a good nursery for *Greenhouse plants*, but more especially for *Heaths*. These are grown by thousands, and are exceedingly healthy. The large specimens are also very fine. Three miles from London; omnibuses every ten minutes pass their gate.

FRASER & Co., Lea Bridge Road.—An excellent nursery for New Holland greenhouse plants, and a fair collection of *Heaths*. This nursery is famed especially for specimens of the above plants. Five miles from London; by Eastern Counties Railway to Lea Bridge.

GAINES, Battersea.—In this nursery is a large collection of *Geraniums* and *Calceolarias*. Persons desirous of seeing these plants well grown, should visit this nursery in May

and June. It is close to Mr. Ambrose's nursery mentioned above.

GROOM, Clapham.—Here, in the month of May, may be seen, perhaps, the finest bed of *Tulips* in the kingdom. There are also a good collection of *Auriculas*, also an immense stock of the *Lilium lancifolium*, and all its varieties, besides several other rare bulbs, such as the beautiful and rare tribes of *Calochortus*, *Rigidella*, &c. Two and a half miles from London. Omnibuses from Gracechurch-street pass the gate every ten minutes.

J. A. HENDERSON AND Co., Pine Apple Place, Edgware Road.—This is, perhaps, the largest plant nursery near London, and well deserving a visit. There is a good collection of select *Orchids*; a select collection of *Stove plants*; an extraordinary collection of *New Holland*, *Chinese Azaleas*, and other *Greenhouse plants*; a fine select collection of *Cape Heaths*; a choice collection of the best *Carnations*, *Cinerarias*, and *Calceolarias*; a fine collection of *Exotic and Hardy Ferns*, &c. At their Nursery at Kilburn, a mile and a half further down the road, they keep a good collection of *Vines*, *Peaches*, *Nectarines*, and all other choice hardy fruits. One mile from the marble arch, Oxford Street. Omnibuses every five minutes from the Bank and Charing Cross.

E. G. HENDERSON, Wellington Road Nursery, St. John's Wood.—The great attraction of this large nursery is the *Cinerarias*. Their fame has gone forth to all parts of the kingdom. *Heaths* are grown in great numbers; also *Chinese Azaleas* and *Geraniums*, especially the fancy varieties. There is, also, a fair collection of *Stove plants*, *Camellias*, &c., &c. Two miles from London. The Atlas omnibuses run past every five minutes from Charing Cross.

WE have before us some specimens of dried *Ferns*, mounted and arranged by a young botanist, for whom we confidently ask the patronage of our readers. He proposes, if he can obtain one hundred subscribers, to furnish each subscriber with a complete set of dried specimens of *British Ferns*. They will be in six parts, each part containing fifty named species, and be charged no more than five shillings. We can vouch for Mr. Brocas' good knowledge of the subject, for the excellence of his specimens, and for the taste and care with which they are mounted. He is a youth struggling up that rough path which the orphan has to take, whose own head and own hand have to win the blessing promised to the diligent. We hope many of our readers will add their names to his subscription list. His direction is, Mr. F. YORK BROCAS, at *R. S. Hill's, Esq., Basingstoke, Hants.*

NEW PLANTS.

THEIR PORTRAITS AND BIOGRAPHIES.

SMOOTH-LEAVED SOLANDRA (*Solandra levis*).—*Paxton's Flower Garden*, i. 171.—Dr. Solander, like A. Bertolini, whose namesake we have biographied at page 82, had four genera named in compliment to him by four different botanists, of which Linnæus, his preceptor, named one; but to this one by Swartz, a German botanist, *Solandra* is now limited. It belongs to the natural order of *Nightshades* (*Solanaceæ*), and in this arrangement comes nearest in affinity to the genus *Datura*, and, like it, is characterized by large handsome flowers and soft succulent wood. In the sexual system of Linnæus it comes into the first order of the fifth class, *Pentandria Monogynia*, having five stamens and one pistil, like *Solanum*, to which the Potato is referred, and after

which the order of Nightshades is named, an order comprising from nine hundred to a thousand species, the



half of which is included in the genus *Solanum* itself. The order contains the narcotic poisons *Henbane*, *Mandrake*, and *Deadly Nightshade*, with others more or less virulent, all or most, of which, however, are valuable medicines in the hands of practitioners, though dangerous to, and always to be suspected by, such as are not aware of the force of their natural qualities. Other species are pungent and powerful stimulants, as *Cayenne pepper*, which is the ground pods, &c., of a species of *Capsicum*, while the tubers of the *Potato* supply wholesome food for man.

The genus *Solandra*, as now restricted, is a small one, the species, however, are no less remarkable for their beauty than for the large size of their flowers, more especially *Solandra grandiflora*, which in many countries is trained like the *Glycine sinensis*, and attains to an equal size, flowering on the spurs and young wood made during the previous year. A few years back there was a large plant of it trained against the garden wall of the Governor of Malta, at St. Antonio, where it covered a surface fifty or sixty feet in length, and flowered magnificently in the early part of summer. Can any reader inform us if this plant is still living, and what the dimensions are? From what we know of the different species in other countries, we believe all *Solandras* would flower more freely if they were subjected to a dry greenhouse treatment from October to April, and great heat and sunlight when they were growing. They were in great repute formerly with our gardeners, but from a supposed difficulty of bringing them into flower they have undeservedly fallen into great disuse of late years. Sweet recommended strong soil for them, and great heat when growing; and he recommended to propagate them by young branches after they were ripe, so that they might flower in small pots. No plants can be more easily increased or preserved.

The genus is in honour of Dr. Solander, a Swedish naturalist, a pupil of Linnæus, and the companion of Sir Joseph Banks, in Captain Cook's first voyage round the world, on whom devolved the arrangement of the botanical researches

of the voyage, which, with his other manuscripts, are now in the British Museum, where Dr. Solander was once under-librarian. His perfect acquaintance with the sexual system of Linnæus gave a great stimulus to the cultivation of botanical science in this country, where it was but very imperfectly understood previously to his arrival in 1760, and thus it supplied the cradle in this country to the more useful and now more sought after natural system of Jussieu.

Solandra levis is a native of Guatemala, and is synonymous with the *Solandra grandiflora* we have already mentioned, and which was found by Hartweg in the mountains of Quezaltenango. The flowers are pale green, and about seven inches long.



LINDEN'S UROPED (*Uropedium Lindenii*).—*Gardeners' Magazine of Botany*, ii. 219.—This is a new and extraordinary genus, even among Orchids, and was recently named by Dr. Lindley, from *oura*, a tail, and *pedion*, a slipper, alluding both to the extraordinary long appendages to the flower, more than two feet long in the wild specimens, and to the slipper-like form of the lip, as in the Cypripeds (*Cypripedium*), to which Uroped is the nearest in affinity. The specific name was given by the same author in compliment to M. Linden, a continental collector who travelled in South America, and whose great success in discovering and bringing over alive many of the rarest and finest orchids in the new world was attested by his sales of them in London in 1847 and last season. *Uropedium Lindenii* sold at the latter sale at prices varying from two pounds six shillings to nine pounds, prices considered by some to be about a fourth of their value. These collections were chiefly from Colombia, in South America, better known as New Granada, Venezuela, and Ecuador. Dr. Lindley has written a half-crown pamphlet describing M. Linden's Orchids, by the title of "*Orchidaceæ Lindenianæ*, or Notes upon a Collection of Orchids formed in Colombia and Cuba by Mr. J. Linden."

In this pamphlet we were first made acquainted with the subject of our biography, "one of the most extraordinary of known orchids." Those of our readers who may have

friends or connections at Caraccas or Maracaibo, or, indeed, in any of the great towns in Venezuela, should endeavour to enlist their good services to procure some of the rare and beautiful plants which inhabit the deep forests of those regions, or the mountain ranges of Merida, from which hardy or half-hardy fine things could be had in abundance; but in attempting importations from thence the unfortunate fate of Hartweg's collections at Carthagenia must not be lost sight of. If any of our supporters should determine on a trial of this nature, we think we could give them such information as would be likely to lead to success.

Uropedium Lindenii was discovered in the woods of New Grenada during 1843 by Mr. Linden. The sepals are yellowish white, the petals, including the tail-like labellum, are of a similar pale colour. B. J.

THE FRUIT-GARDEN.

A CALENDARIAL COMPANION.—It is strange to reflect, that two minds, wide, it may be, as the poles asunder, shall drop simultaneously on the same idea, as it were, intuitively. Yet, so it is, and our worthy friend, Donald Beaton, has actually been guilty of the robbery of a favourite idea of ours, as to this Companion to the Calendar. We beg pardon, it is scarcely robbery, it is, perhaps, in politer terms—anticipation; or it may be something else. Be these things as they may, there can be little hesitation in following such a leader; and we must this week take the liberty of doing so, believing that we shall be rendering the state a service.

Bottom-heat, Renew.—The most jealous care is necessary over all removals of fermenting materials in the month of April. Young gardeners are apt to forget, that a double or treble stimulus to fermentation has arisen in the great increase of the average heat, as also in the impulsive power of intense sunshine. For these reasons, we would never plunge any pots their whole depth at the spring removal; but rather add what tan or other material is necessary by degrees, as the heat subsides. Those who are inexperienced should make a point of feeling their trial sticks daily, at a given time. There is an old saying—"What is done any time, is never done;" and young beginners should suffer themselves to be influenced by its moral.

Cucumbers: Frequently remove linings.—Nothing tends more to preserve the inmates of frames, under early forcing, in good health, than frequent turnings of the linings. Most of the cases of "burning," are traceable to the neglect of this. We would never, if possible, suffer any lining to remain undisturbed for more than a week, any time between the commencement of frame forcing and the beginning of May. The linings should be removed alternately; never both at once; and water should be freely applied. A quiet day is most proper, for there is apt to be an inconvenient loss of heat on such occasions. When turned, the linings should be topped up with fresh materials, and at the next turning the latter may be thrown into the bottom.

Figs.—These are exceedingly apt to cast their fruit, and it perhaps oftener happens through want of moisture than any other cause; not as to the *amount*, at any given period, but as concerning regularity of supply.

Grapes: Increase the air to those ripening.—This, in other words, signifies let them ripen steadily; do not hurry them, if flavour and good colouring is an object. Many persons, in their anxiety to have grapes ripe by a given period, sadly prejudice the character of the produce. We have always found, as to in-door fruits, that the slower they ripen, the better they are, both in colour and flavour. Some of our readers may have noticed the effects of a lowering of temperature on the Keen's seedling strawberry. Through the pressure of various things in the forcing house, in March and April, we have often known a half-gathered crop in pots compelled to give

way to others of a fresher character; and we have known the rejected ones, crammed away into cold frames, produce much superior fruit to those which were gathered from them in the house. Indeed, we have known the premier prize taken by berries thus ripened, and they were almost black in colour, and of the most exquisite flavour. Such matters should not be passed by as trifles by our rising gardeners—they point to facts of great importance; facts which possess a wider bearing than light thinkers are willing to concede to them.

Peaches: Disbud slowly.—To this we may add, watch the development of gross shoots, commonly termed "robbers." Let it be a maxim to cause them to give up their unjustly gotten wealth betimes, by beheading them; a rather severe judgment, to be sure, for the fashionable vice of monopoly. It is, however, the most, I had almost said only, legitimate way of training a proud tree, and of equalising its strength. As we have repeatedly shewn, years since, all the fine diagrams of winter pruning would never effect an equalisation of the sap. Indeed, it is matter of notoriety, that since the fallacy of such notions has been rendered so potent by the horticultural press, during the last seven years, those fine hair-splitting systems, and fantastical modes of training, have almost disappeared from the stage. Thank God, we say, for the advent of so much common sense.

Tomatoes.—Who does not relish a little of this delicious zest with a rump-steak? Now this is a clumsy customer to ripen in the north. Our London fair-weather gardeners little imagine what battles we fight, in order to induce tomatoes to colour at all on the open walls. Early sowing, say end of January, fast cultivation when up, and a thorough hardening off, are here the best preparatory steps. A south wall is the only certain aspect with us; and this can be ill-spared, as everybody knows. In addition, we deem it necessary to plant them on mounds, raised six or eight inches above the ordinary level, and this, in order that a wholesome check to rampant growth may be always at work, for every trifling drought through the summer, curbs their fitfulness, and keeps them short-jointed. We do not plant out finally until the second week of May, and they are then robust plants, almost showing bloom; and even then it is well to hang a spruce bough over them, for fear of an undue visit from the ice king.

Thermometer.—*Beware of extreme night heat.* We are quite aware that "extreme night heat" is a most indefinite affair; yet such is the amount of brevity inherent in all calendars, that everything is compelled to wear an apothegmatical and sententious character; and this, indeed, would seem to point to the propriety of the course suggested by Mr. Beaton. By *extreme*, was meant attempting the maximum point, on every occasion, for the sake of accomplishing, it may be, an uncertain good. There can be little doubt that much lower night temperatures are endured, nay, enjoyed, by most of the inmates of our hothouses in their own climes; for it must be remembered, that if a blind adherence to what is termed nature, is to be the sole maxim, we must, forsooth, have our tornadoes, our harmattans, and now and then a rattling hail storm. These things, however, would ill assort with our tender hothouse pets, and, therefore, such extremes are more honoured in the breach than in the observance. For instance, who can prove that a thermometer of 50° at night would be injurious to vines under forcing, provided they had been brought up hardy,—by which we mean liberally ventilated, no codling? We throw this out as a hint for consideration.

Having done with the fruit-forcing calendar, with now and then a skip—which said skip strongly reminds us of a skipping schoolmaster, who, not being well up in his scholastic lore, used to say to his boys, when he met with those long and difficult names with which

our Bible abounds, "Skip it lad; neither thee nor I knows it!"—having finished that, we proceed to a few things in the hardy fruit-garden.

Blossoms of wall-fruit protect and retard.—Everybody now knows what protection means; but are not so knowing as to the retarding principle, which is as yet only in its swaddling clothes. It is, however, a fine baby, and will, doubtless, one day grow up to be a credit to its parents. Our worthy editor seemed to regret that we had not stirred nearer the bottom when disturbing this subject in the number for April 3rd. The fact is, we thought it anything but premature to discuss this matter so late in the spring—a matter better fitted, perhaps, for the middle of January. Still, "better late than never,"—a maxim as broad in its bearings as charity itself. There can be no doubt of retardation being a fact, and a *great fact too*. We have not here room to go into the philosophy of the thing, but a little careful consideration will show any one its bearings. If any one doubts it, let him try the reverse course for three consecutive springs, and see what the average effect of premature excitement can accomplish. This, although not logically conclusive, will yet have the effect of tearing away any film from the eyes which may hitherto have obstructed the vision, and of affording a broader glimpse of the subject.

Mulching.—It is of no use at the end of April awaiting to discuss the over-nice point of whether mulching does, or does not, prevent the soil receiving the rising solar heat. That it does so, there can be little doubt; but it is not a question of heat alone. It is by far more a question of moisture; permanent moisture, we mean, as concerns transplanted trees especially. In advising the million, therefore, we say, mulch or top-dress all newly-planted trees at the end of April; and do the same to all half-starved or meagre-looking fruit-trees, as also to all full-bearing kinds, especially if the subsoil cannot be relied on.

Wasps destroy. We confess to believing in the doctrine, that keeping down wasps in the spring, as surely tends to keep down nests in the ensuing summer. Not being entomologists, our readers will doubtless excuse a country joke about them. We have a wasp-wise personage, a shrewd old countryman, who has had much to do with catching wasps, and taking them here, for the last quarter of a century, and who bears the very popular cognomen of Tom Brown—a surname second only to the Smiths in our directories. Tom affirms stoutly that every other year is a wasp year, come what will; and that, strange to say, those springs that produce most single wasps, are by no means the most prolific in nests. We cannot vouch for the depth of Tom's philosophy, but really Tom has facts on his side very frequently.

R. ERRINGTON.

THE FLOWER-GARDEN.

GLADIOLI.—Now is a very good time to plant out the different varieties of these very showy border flowers that were potted last October and November, and kept in cold frames, and which may now be five or six inches high in the leaves. Also a good time to plant the last lot of bulbs of the *Gladiolus psittacinus*, and its seedling varieties, which do not require to be potted or planted till the spring. We have often advised that these spring gladioli should be brought on in three successions, by planting some of them in February, others in March, and the last lot about this time, which will carry on the bloom till the middle, or end, of October. Those, therefore, who may wish to try this experiment for the first time, will still find dry bulbs, or roots as they are called, in the seed shops, particularly the London houses. Last week I put the last hundred bulbs of the *psittacinus* into a bed of pure sand, in the reserve garden, to root

and sprout a little, so as to be forward enough for planting finally where they are to bloom sometime after the middle of May. The spaces they are to occupy being now too full of other things for spring flowering. I never found that moving them from this temporary arrangement had any ill effects either on the bulbs, or on their flowering, if they are carefully handled at the time of transplanting, so that their tender roots are not broken or crammed into narrow dibber holes. The roots spread out in all directions in the loose sand, and they will carry some of the sand with them when removed, therefore, the best way to plant them, is to open a flat drill three inches deep, if they are set in rows, or if in patches, to take up a spadeful of soil, and put five or seven of them together, a few inches apart, then to cover them with some light compost, and give them a good watering to settle it about the roots. Any one who knows how to make up a bed for a choice collection of hyacinths or fancy tulips, can manage a bed for gladioli exactly in the same way; and those who do not, must try and make a deep, rich, light bed for them, say two feet deep, filled with equal quantities of sandy loam, or loam and peat one half, and the rest of leaf mould, or rotten refuse of some vegetable matter, with a little sand or road scrapings, but no *fresh manure*, for no kind of bulb likes to be near fresh dung. When this kind of bed cannot be had, the next best way is to dig out a round hole, eighteen inches wide, and two feet deep, and to fill it with the best light compost that can be procured. The turf parings from the sides of the walks and flower-beds this spring, is an excellent thing to put at the bottom of the hole; and broken turf from a common is still better, say to the depth of one foot, then the rest may be from the top spit of any of the quarters or corners of the kitchen garden, if it can be spared. Planting out of pots does not disturb the ball in the least, and place it so that it is half an inch lower than the general level of the bed or border; the soil of the ball should be moist throughout, at the time of planting, and a few boughs of some evergreens should be placed round those that have leaves, for the first ten days or so, to break the force and chill of the easterly winds, till the leaves are inured to the change. When all these things are at hand, and things go on as they ought, gladioli will flower and seed far better this way than in pots under the best management; and no garden should be without lots of them, and under this system they need not be taken up every year, nor for many years, if the bed suits them.

JAPAN LILIES.—The very same kind of treatment will do for these also in beds, borders, rows, or patches; and they are even more accommodating than the Sword Lilies, or *Gladioli*, for they will do just as well in the American or peat beds, as in the best compost one can make. In planting them, it is a good plan to cover them full six inches, or, as they must now be turned out of pots, say four inches. They, too, may be left undisturbed for years; and it is worthy of remark, that a young brood of them, not expected to flower for the next two years, will increase in size and strength in the open ground, when rightly prepared, at double the rate they would in pots in the hands of the best growers; so that the trouble of pot-nursing them is best dispensed with, even if no flowering bulbs can be spared for the borders. It is very strange how few of the finer lilies one sees in the best of gardens; for mixed borders, no plants give less trouble, and every one admires a fine lily in bloom.

IXIAS.—The strongest of them would answer to be turned out of their pots now into a warm border, in front of a greenhouse, or some such shelter; and I have often treated a surplus stock that way, but I must say I never found them do nearly so well as when planted at once into the border, at the end of September, and pro-

tected from the frost by a moveable covering. The number of half-hardy bulbs, however, that would repay one, by a little care, on a front narrow border, is almost endless; and I believe, the chief reason why this class of plants is neglected, is the want of knowing the times at which the different kinds go naturally to rest, or flower, or begin to grow; for nothing is less satisfactory than to find out that of two bulbs, planted side by side, one grows during our summer, and the other only from October to May, as, to do justice to the first, the second must be altogether out of its proper course. I have, over and over again, met with this difficulty when I had to do with new bulbs, or such as I did not know how they went on in their own country; yet people give me some credit on my success with bulbs generally; so that I had, as it were, a character to sustain in our most useful *Cottage Gardener's Dictionary* respecting them; and, as far as my acquaintance with them, and the space allowed would permit, I have shown the seasons of their growth, flowering, and rest; and that, with their culture and propagation, by Mr. Fish, is all that is necessary for any tolerably intelligent gardener to know. Our amateur readers who find the details too limited, have only to apply for what more they require in these pages, and between us all, we must surely spread an increasing interest in the cultivation of half-hardy bulbs. I believe I have not told distinctly that I have effected a *true cross* between the great Candalabra bulb, *Brunsvigia*, and the purple *Valotta*, and I am as confident of the cross as if I had it now in bloom on my table. The curious cross between this *Valotta* and the *Cyrtanthus*, which I obtained two years since, is as sure to be an intermediate breed as anything can be; so that these three genera, notwithstanding the dissimilarity in their habits and outward appearances, are, after all, but one and the same thing—true Amaryllises, chips of the old block, which will cause a derangement in the classification of Decandolle, Endlicher, and Lindley, and bring Dr. Herbert's words true, "that the gardener can force the systematic botanist to reconsider his arrangement through the process of cross-breeding."

There are in cultivation scores of good *plants which never produce seeds*, caused in a great measure by the want of some provision of nature, in the wild state, for the dispersion of the pollen dust; and if we would but take the trouble to effect this by our own hands, we should be repaid by a crop of seeds of many things that are still comparatively scarce and dear. Mr. Sweet is the only writer, that I am aware of, who lays a proper stress on the necessity of artificial impregnation when seeds were desirable; and he was so expert in the practice himself, that he could cause almost any plant to seed if he got it into bloom. This is altogether irrespective of crossing. Some of the more knowing ones make a little fortune by growing seeds that none can grow without the artificial setting of the pods. For some years, I have been adding to a list I keep of plants or genera that will seed, although the flowers be destroyed before they expand; and for practical purposes, I look on all flowers as giving no aid to the setting of the seeds, and that they may be dispensed with whenever it is difficult to ensure impregnation, as in long-tubed flowers. All that is really essential, is to see that no remains of flowers, or their envelopes, or any other thing, get in contact with the young seed-pod, or with the style which is always connected with it, and cause them to damp or be otherwise injured. In short, let the nurse be taken care of until the youngsters are able to take care of themselves.

ARRANGEMENT.—Just now is the most likely time of the year to get into confusion with a large stock of half-hardy plants for the flower-garden—so many of Number this, or Number that, are fit to be placed out of doors under mats, or other temporary shelter, while the rest

of that sort are yet too young or too delicate to stand a puff of cold wind; and so on through all the spring-propagated plants. Or let us say that one-third of the *Anagallis*, *American groundsel*, *Lobelias*, &c., are unfit to leave the glass frame, while the rest of them are being hardened off somewhere else, and that before the middle of May some of each kind are placed in three different places. Then say that twenty or thirty thousands of little plants are so distributed when it is time to begin planting out for the summer arrangement; and if that is not confusion, I know not what is. Every pot or plant that is changed from one place to another from the beginning of April to the end of May should be arranged like the words in a dictionary, and this is how it is done. The best scarlet *Verbena* is marked number one upon a little stick in the pot, and in the garden book, under *Verbena* number one, the name is written in full, and after the name stands number five hundred, meaning that so many of number one are to be planted this season. As soon as a parcel of number one is ready to be removed out of doors, or into cold pits, you place the whole of them together at one end, count them, and check the number by the book; you find it to be three hundred and fifty, so you must leave a blank space for one hundred and fifty more, some of which will be ready next week, and some not till the week after; but by the time they are all ready, they are put in the blank space; and when you come to plant out number one verbena, you know to a plant where they are to be found, for if they are not in the proper stall, some one has made a blunder, and you must spend the half of a fine afternoon hunting through the whole collection for them, instead of turning them up like a word in the dictionary. This process must be carried out with numbers *two*, *three*, and every number in the book, and nothing is more simple; but the system should be rigidly adhered to all the year round, and from year to year. The propagation book should tally with the catalogue in every instance, and may be called the day book. Here is the first entry for this year—

August 5th. *Geraniums*. 23rd. 30th.
1. Tom Thumb, 500—300—150.

Which means that on the 5th of August, 500 cuttings of Tom Thumb were made, that variety being number one, 300 on the 23rd, and 150 on the 30th of the same month. Then follow all the rest of the *Geraniums*, according to their numbers, and so with every other family. By looking over the propagation book before the frost sets in, you see the stock on hand of every sort, and you will know how many of the old plants to take up for next year. Each sort will be kept separate in their winter quarters; and when you begin propagating in the spring, you make all the cuttings of one number before you begin the next; and when a frame full of cuttings is ready to pot off, contrive to pot all of one number in the same way.

D. BEATON.

THE ROSARY.

PRUNING AND PROPAGATING TEA, BOURBON, AND CHINA ROSES.—All the tender kinds should receive their final pruning this month; and, as a general principle, the more freely they are cut down, the more freely and strongly will they bloom, though the bloom may not be so early as if longer pieces of the old wood were left. After a slight protection during the winter, with moss and spruce or laurel boughs, when these are removed, fine strong buds will be found breaking near the collar of the plant; and, if cut back to these, there will be a succession during the season of strong, somewhat succulent shoots, each surmounted with a number of fine flowers—which shoots should be cut back as soon as

the flowers have faded. I am alluding chiefly to the tender dwarf kinds; and in their case, treating them thus, as if they were semi-herbaceous, causes them to yield the greatest quantity of healthy strong blooms. These prunings may be even rendered useful for increasing the number of plants. I mentioned, the other week, how the small young side-shoots might be treated; and a few of the tenderest of the Teas and Bourbons, though the cuttings should consist of a part of the old as well as the new wood, might receive similar treatment; but for the majority of moderate hardy and strong-growing kinds, such care will not be necessary. All that will be required, will be to cut the prunings into pieces of the last, and even sometimes of the previous year's wood, from six to twelve inches in length, cutting across at a joint at the bottom, or, better still, at a *heel*, where the last year's shoot has sprung from the shoot of the previous year, and having at least one bud in the upper part. Prepare a small border on the north side of a wall, hedge, or other fence, by putting a layer of coal-ashes, with a little salt, at the depth of twelve inches, fill up nine inches with very sandy soil, containing a little leaf-mould, and finishing with from three to six inches of sand on the surface. Then firmly insert the cuttings in rows, water, put a few twigs among them for a few months, and, with the exception of a watering now and then, they will require no more attention.

R. FISH.

GREENHOUSE AND WINDOW GARDENING.

POTTING—ONE-SHIFT SYSTEM.—*Concluded from page 36.*

4th. *The peculiar treatment to insure success.* First, in common with other modes of potting, the pots should be sound, fairly burned, dry, and either new, or thoroughly clean, outside and inside. The man who puts a plant in a dirty pot, has too much of the Goth in his composition to possess, in any circumstance, much delicacy of feeling. Secondly, *good drainage*—always essential—must here form a chief element of success. In all plants intended to remain in the same pot for years, it cannot be too particularly attended to. Green moss, or chopped wheat straw, strewed over the drainage, is a good thing for preventing the earthy particles above being washed into and choking it up. Broken charcoal, from whence the dust has been extracted, is also very useful for this purpose. Indeed, larger pieces of charcoal may constitute the chief part of the drainage, which will be lighter than most things that could be used—a matter of considerable importance. On this account, alone, it is valuable for mixing with the compost, to keep it open, independently of any chemical properties it may possess. Thirdly, *soil*. This, whatever may be its constituents, should be rough and lumpy; the bulk, in general cases, consisting of pieces from the size of peas up to that of beans and walnuts; and in cases of larger pots, a few pieces may be as large as hen's eggs. In such compost the plants will grow rapidly; and even in the case of heaths, &c., they will maintain a healthy appearance for years. If the compost, should much of it be in *larger pieces*, the plant will not at all be greatly injured for the first season, or more, nor yet as long as the roots are contented to crawl around the surface of the lumps; but when they have reached the side of the pot, and necessity leads them to penetrate the large pieces, a declining appearance is apt to present itself; because these pieces, closely packed from their very size, are apt to become *sour* in the centre, as the purifying influence of air cannot reach them. Hence the complaints against the system, that though plants grow vigorously at first, they were short-lived. Such large shifts in the fine sifted soil of old could not succeed, unless in potted specimens, that received more care than

can in general be given to plants. Using huge lumps of loam, or peat, would tend to produce a similar evil, though from causes apparently different. The middle course is the safe one.

5th. *In potting considerable care is necessary.* A plant never thrives well when the surface of the ball is sunk several inches below the rim of the pot; and there is something uncouth in observing the centre of the ball sticking up in the centre of the pot, like a mole-hill, as used to be the case in growing heaths, &c., before the principle of drainage and using rough soil were so well understood as they are now. In all cases, therefore, but especially where it is intended for a plant to continue for years, the compost should be pressed firmly before the young plant is set in the centre of the pot; and as, nevertheless, it will gradually sink a little, the surface of the old soil may just be a little below the rim of the pot. If the roots are the least matted, they should now be gently disentangled, and packed carefully with the hand, in layers, putting the finest of the rough soil over the young rootlets, and the coarser towards the outside next the side of the pot; and squeezing all rather firmly together with the hand, taking care, however, that the soil is in that happy medium that may be termed neither dry nor wet, and yet sufficiently *heated* to occasion no immediate check by cold.

6th. *Watering* is the most important of all points, and, where it cannot be properly attended to, the one-shift system should not be attempted. I have repeatedly said, that the principle to be generally attended to, is to reach with moisture every fibre of the roots, and then wait until your services were required. But, in ordinary cases, such advice is synonymous with advising the moistening of all the soil in the pot equally and thoroughly. Do so with newly-potted plants on the one-shift system, and you will soon have candidates for the rubbish-heap. For some time you must merely water as far as the roots extend—the unappropriated soil must not be *soaked*, or it will become *sour* and unhealthy for the roots even before they get to it. If you wish to be convinced of this, set a well-drained pot, filled with soil, along with pots having growing plants in them, and give them all a dash regularly from the watering-pot, and just take the trouble of examining the composition in the *plantless* pot, after a few weeks' experiment, and the soaked, soapy look will at once show you the influence of *roots* in keeping the soil in pots in a good condition. No regular routine dash or dribble from the water-pot will do with the one-shift system.

I should have said, under the preceding head of potting, that, with rough soil, it is necessary to surface with a little that is finer, that the air may not enter too freely.

7th. *Temperature.* On this system, for some time after potting, the plants should have from 5° to 10° more heat than they otherwise would require; and a close atmosphere until fresh growth is proceeding freely. A dash from the syringe frequently in hot days will be of great importance. Every incitement to growth must thus be given; and when that has been accomplished, then air must be freely imparted, and a drier atmosphere maintained, that the fresh wood so freely made may be thoroughly matured. This will be especially necessary with all lasting plants, or they will become rather *gouty* in winter. Temporary fleeting beauties will be encouraged by the same treatment.

8th. *Time of Potting.* Upon this system, in the case of all lasting plants intended to be our companions for years, this should take place in spring and early summer, in order, first, that growth may be quickly made, and then maturation of the wood be effected before the dark days come, when, in the generality of cases, the low temperature of winter will give them the *rest* they require, before breaking and flowering vigorously and profusely the following season.

R. FISH.

HOTHOUSE DEPARTMENT.

STOVE ANNUALS.—(Continued from page 26).

BROWALLIA DEMISSA (Low B.); South America.—A pretty low growing annual with blue flowers.

B. ELATA (Tall B.); Peru.—This is a taller grower, also with blue flowers.

B. ELONGATA (Elongated B.); Peru.—This species has blue and white flowers.

Culture.—Sow the seeds in a gentle hotbed in March, in 5-inch pots, filled with light rich earth. When they are two inches high transplant them singly into 3-inch pots.

Soil.—The compost suitable for these pretty annuals is formed of light turfy loam, sandy peat, and leaf-mould, in equal parts, adding a fair portion of sand; mix these well together, and use the compost moderately dry. As soon as the roots have reached the sides of the first pots, repot them into 5-inch pots, well drained, placing them in the stove near the glass, stopping them to cause them to make nice bushes. Repot again in a month into 8-inch pots; in these they may flower. This is a genus of annuals worth growing, though not so showy as the Balsam or the Cockscomb. They are valuable for the sake of their variety of habit and colour of blooms, causing an agreeable diversity in the general view of the plants in the stove during the summer months.

CLEOME CARDINALIS (The cardinal flower C.); Mexico.

———— **CANDELABRUM** (Chandelier C.); Brazil.

———— **PENTAPHYLLUM** (Five-leaved C.); West Indies.

———— **ROSEA** (Rose-coloured C.); East Indies.

This genus of plants contains a considerable number of annuals requiring the heat of the stove. In it there are, also, some species that are pretty hardy. Their beauty consists in their extraordinary long stamens, which are beautifully disposed. Unfortunately the seeds are difficult to procure. It would be desirable if some of our collectors, when searching for plants in their native localities, would collect the seeds of these pretty annuals and transmit them to this country. Our readers may obtain some of the species by applying to some large dealers in London, such, for instance, as Charwood, in Covent Garden, and Carter, in Holborn.

Culture.—**Soil.**—The same compost as recommended for Browallias will answer for these plants.

Raising the Plants.—This is rather a difficult task, as they are very apt to damp off in a hotbed, and yet cannot be raised without heat. Sow them towards the end of March in shallow 5-inch pans, well drained. Place them upon a shelf in the warmest part of the stove. In this situation they will be in a drier atmosphere, and, consequently, not be so liable to fog off. When they have made their appearance, prick them off thinly into 5-inch pots, replace them on the shelf, water very moderately, and shade from bright sun for a week. After they have made a second growth, pot them singly into small pots, give water, and shade again till fresh roots are emitted; then give more air and light, and repot and grow on till the plants have attained a considerable growth, and are in 8-inch pots. They may then be permitted to flower.

MIMOSA PUDICA (Sensitive plant); Brazil.—This is the well-known plant whose leaves, when touched, fold themselves up, and fall down as if struck with death; for which interesting property it is desirable to cultivate a few plants.

Soil.—Light loam, and sandy peat, in equal parts, with a fourth of leaf-mould, and a small quantity of sand, will grow these plants satisfactorily. They do not require such rich soil as most other stove annuals do.

Raising the Plants.—Sow the seed about the middle of March, in a 5-inch pot; a sixpenny packet will be sufficient, and will produce a score or two of plants. Place the seed pot either in a hot-bed, or on a shelf in

the stove. Give a gentle watering, and keep just moist enough for the seeds to germinate. As soon as they have made two or three leaves, pot them singly into small pots in the compost, draining well, and repot till they are in 6-inch pots. Nip off the tops occasionally to make the plants bushy. These plants will not bear an indiscriminate quantity of water, it must be applied regularly, but not in floods. If a second crop be sown in August, they will survive the winter in a warm stove, and will sooner make fine large plants in the spring.

THUNBERGIA ALATA (Winged T.); East Indies.—This fine, and, when well grown, beautiful stove climber, though not strictly an annual, is by far better to be treated as such. There are several varieties, and to preserve the finest, it may be desirable to propagate such by cuttings; but these never make such plants as those raised from seed in the spring. If the seed be saved from the best formed and highest coloured flowers, there will be a goodly number of good varieties. The best consist of the following colours: pure yellow; orange, with a dark spot in the centre; pure white; and white, with a dark centre. Though they are all beautiful, yet such as have the dark centre are the most esteemed.

Culture.—**Soil.**—There is a peculiarity about these plants, in regard to the compost they will thrive in, that very few plants will bear. The finest specimens we ever observed were grown (after they had attained the height of six inches) in a mixture of loam and night soil, which had been well incorporated for twelve months, and frequently turned over to mellow and sweeten. In this exceedingly rich, strong compost, the plants grew with a vigour and luxuriance that was perfectly astonishing. The leaves were nearly double the usual size, and the flowers were much larger and more highly coloured. It may, however, be not always convenient to obtain this rich stimulant. The following will answer the purpose very well. Good well-mellowed loam of a strong texture, well-decomposed dung, and sandy peat, in equal parts; mix them well together without sifting, leaving the turfy parts as rough as possible, so as to ensure a loose porous compost. This compost will, with the addition that we shall mention, grow the plants most vigorously—every other point of culture being duly practised.

Raising the Plants.—Sow the seed in a light, rich compost of loam, peat, and mould, in pots five inches wide. Place them in a moderate hot-bed, giving them a little water at the first, and more freely after they have come up. Pot them off into single pots, whilst very young, in the same compost as they were sown in. As soon they have filled the pots with roots, repot them into pots two sizes larger. Use then the richer compost, draining them well. In this stage they require a larger share of air to prevent them drawing up weakly and spindly. When they have filled their last pot with roots, repot them for the last time into 10-inch pots, but do not quite fill them with the compost. They will now require some kind of support; various articles may be used for this purpose; the most simple, and, perhaps, quite as ornamental, and certainly the cheapest of all is, to procure some twiggy, straight branches of birch or hazel, between two and three feet high, place three, triangularly, in each pot, trimming them round neatly so as to form an upright bush. The plants will cling to, and soon cover, them with foliage and flowers. Another mode of training, not much more expensive, is, to split some laths into three feet sticks, making them round, and placing five in each pot; put a hoop of some kind either made of willow or strong wire, of the same diameter as the pot, about half way between the pot and the top of the sticks, tie each stick at equal distance from each other to this hoop, then draw them together at the top, tie them firmly, and there is a very economical and elegant trellis for the shoots to twine round. If expense is no object, the best thing for the purpose is a wire trellis;

perhaps a balloon-shape, with a kind of crown on the top, is as ornamental a form as any. However, the cultivator must decide for himself what form of trellis he would like, as it is quite immaterial, so long as there is plenty of room both in width and breadth. By the middle of July, or even earlier, the cultivator will be rewarded by having plants three feet across, and one foot or more through.

GOMPHIRENA GLOBOSA (Globe Amaranthus); India.—This, also, is a beautiful stove annual. It forms neat, dense bushes, each shoot bearing a head of flower almost round, or globe-shaped—hence its name. Colour bright purple. There is also a white variety.

Culture—Soil.—The usual compost formed of loam, sandy peat, and leaf-mould, with a due portion of sand to keep it open, answers well for these plants.

Raising the Plants.—The seeds generally come to the grower in the husk, or seed vessel. It must be cleaned out of it, and sown in a 5-inch pot, covered with fine soil the thickness of a sixpence, then give a gentle watering, and place in a hot-bed, or warm stove. The seedlings will soon be up, and when they have made three or four leaves, pot them singly into 3-inch pots; repot as they require it till they are in 6-inch pots, which is large enough to flower them in. This is the last of the stove annuals we judge worthy of cultivation. There are plenty more, but either the flowers are small, or otherwise undesirable.

T. APPLEBY.

FLORISTS' FLOWERS.

PINKS will require attention now to refresh them, by stirring up the surface of the soil, and adding a thin coat of either very much decomposed manure or decayed leaf-mould. This covering will prevent the soil from cracking, will feed the plants, by its nutritive properties being washed down with the rain, and protect the roots from the heat of the sun's rays.

PANSIES, in beds, require the same treatment. The long shoots may be pegged down, and layered the same way as the Carnation. They will throw out roots where the incision is made, and from the layer making fresh roots, and drawing support also from the old roots, the finest and most perfect flowers thus will be obtained.

T. APPLEBY.

THE KITCHEN-GARDEN.

ROUTINE WORK.—Sow the various kinds of late *brocolis* in full crop, make another sowing of *Walcheren cauliflower*, *borecole*, and other varieties of *kales*, *Savoy*, *Coleworts*, &c. Plant both *kidney* and *dwarf beans* in well-prepared ground, and plant out those which have been forwarded in heat, or in sheltered situations, and protect them by raising a low bank on each side, which should be covered with boughs or some other material. Sow *Sweet Basil*, *Marjoram*, *Thyme*, *Savory*, and *Burnet*, in full crop, if not already done. *Cape brocoli* should be sown occasionally for the next six weeks; and plantings should be also made of this vegetable and of *cauliflowers*, for some time to come, on well-prepared ground, and where they may be partially shaded by *peas*, *scarlet runners*, or a northern aspect. Much is to be accomplished by attending to such little matters at this season, with regard to securing a succession of healthy, useful produce in the heat of summer, at which time we have frequently observed the crops too liable to failure in some gardens, in consequence of an injudicious selection of vegetables, and the sowing and cropping the soil too fully at one time. It should always be remembered, in arranging for the different seasons, that in the summer certain crops are required to partially *shade* others; whilst, in winter, the same provision is required to *shelter* them.

PEAS AND BEANS.—We practice the sowing of peas, &c., on the warm side of sloping banks at an early season, and, as the season advances, we plant and sow

on the shady, cold side, and nurse such crops as require heat and shelter on the warm side. The dwarf late kinds of peas should now be sown on the cold sides of sloping banks or borders; also the *green-garden* and *Windsor beans*.

Spinach, *turnips*, *lettuce*, *radishes*, &c., should be sown in succession in partially shaded cold situations, and the present is, also, a good time for sowing the true *Virginian tobacco*, so as to get a good produce of large leaves for smoking the pits and frames, &c. We sow in pans at the end of this month, and place them in gentle humid heat, pricking off the plants into pans or pots, as soon as they can be handled, an inch or so apart, with some rich, open, healthy soil, placing them close to the glass in frames, pits, or other place where a gentle heat is at command, such as the back of cucumber or melon beds, for a short time; and as soon as the plants are established, and grown large enough to produce four or five leaves beside the seed leaves, they are pricked into small sixties, which can at that time be spared from the flower-garden plants, that are then being turned out. The growth of these tobacco plants is encouraged for a few weeks, and hardened in order to turn out by the end of May, or beginning of June. If we have ground well-prepared to spare, part of them are turned out upon that, and the remainder between every alternate row of early potatoes, three feet apart from plant to plant. By the time that the potatoes are ripe and taken away, the tobacco is well established; and the plants having become sturdy and strong, the ground is forked over, and, of course, always kept clean and open by repeated surface stirrings. A liberal soaking of manure-water is occasionally applied, or advantage is taken of showery weather to have the earth raked away a foot round each plant, and a small portion of guano sown round it, and the earth at once again returned over it. By such treatment we grow the tobacco from five to seven feet high, well furnished with luxuriant foliage from the bottom to the top. Fine weather is taken advantage of for gathering the leaves from the base first, and placing them in proper places for gradually drying. When sufficiently dry, they are packed closely and firmly into dry boxes ready for use; and ultimately, at the end of the season, stalks, roots, and all, are put together, and dried; and, when made use of, are chopped up fine, and turned to useful account for destroying vermin, either by smoke or decoction.

FRAMING.—*Cucumbers* and *Melons* sow in succession of favourite kinds. Pot off early, and stop at the first joint. Do not allow any vacancies to occur in pits or frames; but at all times have nice plants in readiness. Continue to keep each methodically trained, and the vine thin. Fruit, too, should be regulated according to the strength of the plants, and not so to impoverish them that they are unable to bring the fruit to the greatest perfection. Keep it picked off and thinned in due season, taking care, at all times, to keep those that are set on the strongest vine, and of the handsomest shape. Those in full bearing assist with occasional application of tepid manure-water. *Melons*, when about half grown, require good attention of this kind. Lay the fruit on slate or glass, clear from the soil, and point the blossom-end of it towards the north aspect; no cracked fruit will then be seen, unless water is applied over them, and the sun is allowed to shine on the structure the next morning, previous to air being given. It should be carefully borne in mind at all times, both with cucumbers and melons, that air should always be applied previous to the sun's rising, or, at all events, previous to its shining on the structure in which they are cultivated; for nothing will produce canker so soon, or to the same extent, as the morning air thus confined and mixed with the previous night's humidity. JAMES BARNES.

MISCELLANEOUS INFORMATION.

ALLOTMENT FARMING FOR MAY.

CULTURAL MATTERS.—Under this head may be classed the following: sowing, planting, hoeing, raking, rolling or treading, watering, weeding, &c. We will offer a little advice on each separately.

Sowing.—This appears, at first sight, such an ordinary operation, that it could hardly afford room for a remark. Not so, however; to sow seeds evenly, and of a proper thickness, not only tends to economy of seed, but economy of labour. There is an old maxim, "sow thick, thin betimes, &c." Now this extreme doctrine ought to be received with caution, for we have known young crops require an excessive amount of labour in *thinning alone*. Take for instance the *carrot*, which, when young, is a delicate plant, and behold what a time it requires, if sown very thick, to single them out, as it is termed, especially if there should be a plentiful produce of weeds with them. Moreover, the plants become blanched and tender in the stem, and we have known a crop thus situated, singled out during a showery and growing day, succeeded by intense sunshine, half-destroyed by the sudden influence of sunlight on their stems; and, if not destroyed, so paralysed as not to thrive again for some weeks. We say, therefore, always sow at the ordinary distance, unless the seed is known to be inferior, avoiding all extremes; and as seeds, even from first-rate houses, will at times prove inferior, we should advise those who live near large towns, to divide their necessary amount of purchased seeds in two, purchasing one-half at one shop, and the other at another shop, and then mixing the two samples together. Thus, if one is inferior, the other may correct its deficiencies. In sowing *onions* we always mix the whole of our sorts together, and, of course, we never fail of a crop; they are easily sorted at harvest time, for the kinds do not always answer to the name on the bag or paper.

Our seedsmen, in general, have so many superlatives, in these days, attached to their packets; the terms superb, splendid, superior, &c., they fling about at random; but we much fear that the superlative term is a piece of waggery in many instances, and refers to the *price*! We advise our allotment friends not to sow in wet weather, although they may be *behind* with their crop, they had better risk another week or so in most cases. Most seeds are the safer for rolling or treading in, but this must only be performed when the soil is dry and mellow; the philosophy of this seems to be, that it has a tendency to prevent heavy storms from closing up the pores of the soil, and is done on the same principle as a clever potting benchman presses his fresh and elastic soil around the plant, which soil is then not nearly so impervious to air as it would be if tumbled in loose and settled, as some of the dogmatical gentlemen of the old school used to recommend in our boyish days; which settling, performed with finely riddled soil, too often proved a settler indeed. We were on the rail, a few weeks ago, on the North Stafford line, the pottery branch, and at Stoke (we think) there is a large allotment piece, much subdivided, whereon were working several persons, each one to his plot. One near the rail was sowing onions, apparently, and was in the act of riddling through a sort of flour riddle the fine dust to cover his seed. If this meet his eye, we beseech him to hang his riddle up and let it rest.

PLANTING.—Or rather, shall we say, transplanting. It is good practice to get the ground perfectly ready, the drills drawn, and any other necessary point, during dry weather, so as to have everything ready in order to avoid much transplanting when showery weather occurs. Never curl up the long roots in planting; if they cannot be got into the holes, it is far better to cut them off to a convenient length. Let the planter be sure to fasten his plants well; many plants are half-withered during scorching weather through this bad planting, otherwise termed "hanging."

HOEING.—We fear it is too much the practice to use the Dutch hoe, which, although of great service on well prepared light soils, is by no means so well adapted for our stiffer soils; and, indeed, does no good in a cultural sense. Whatever ground is hoed should be raked as the hoer proceeds.

It is lamentable to see a poor fellow hoeing away on foul soil for many hours, and going away fancying he has despatched the enemy, when lo! a growing shower or a thunder splash, and three-fourths of his weeds are imbedded again, as though transplanted. As a general maxim, we advise the cottager to *dig in* all he can; this is the best cure, and is, moreover, a kind of summer fallowing.

RAKING.—We seldom or never rake ground after seed sowing, knowing it to be a mere convenience, and decidedly averse to sound cultural principles. By a little forecast, and a nice handling of the spade, seeds may be got in upon the most stubborn soils. Where the extent is not great, we would have the allotment man cover his drills of swedes, mangold, parsnips, carrots, &c., by hand, using a little mellowed soil, with which some old vegetable matter or very powdery manure was blended with a little soot or guano. Drills thus covered, we press, when dry, by moving the foot up them.

WEEDS.—"No quarter" should be the only aim with the allotment man; let him never dream them a trifling affair. But to be successful this way, he must not simply act on the defensive; he must carry the war into the enemy's camp. He must not merely prevent the grosser weeds smothering his rising crops, he must, as it were, anticipate them, getting to work at them the moment a resuscitation appears. Of all the weeds most plaguing amongst young seedlings, we think young seedling grass the worst. We have known them, where the common annual *Poa* had been suffered to seed in the previous year, so thick amongst beds of onions or carrots, as almost to induce the cultivator hopelessly to dig them in, crop and all. Let our readers, therefore, beware of seed weeds.

MANURES.—Let no manures be left uncovered after the month of March, say we, whether on the land or in the midden. We do not expect every one to cover, daily, their little manure heap; we merely point to what we conceive a great principle; for, after all, soil is the most simple and ready fixer of ammonia, if not the best. There is, at least, this merit in frequently coating dunghills with soil—the bulk is increased, and that, too, by a medium which is mechanically essential in breaking up and dividing the flakes of manure. Those who are "well up" in cultural matters know full well that manures require the intervention of soily materials, in order to facilitate the speedy extension of the fibres amongst growing crops. We come now to the consideration of the allotment crops separately.

SWEDES.—We observed last month that, for a succession or associative crop, the swede grower must not be ruled by any man's time for sowing. He must sow with a view to have good stout plants ready the moment they are wanted. For such purposes the first or second week in May will, in general, be quite soon enough.

MANGOLD.—No transplanting here, at least we will not recommend it; although we have known pretty good crops thus treated on rich soils. On light and rich lands we would not sow mangold until the beginning of May; but on harsher and poorer soils we would be a fortnight sooner.

CARROTS.—Those who have not sown their main crops of carrots must do so immediately. Those who have been in the habit of sowing carrots in the end of March will feel alarmed at the laxity of our notions as to sowing; but our experience goes to show that late sown carrots are much less liable to the grub than early sown ones; and this is not a trifling consideration. However, the soil must be in a good tilth, and the seed introduced with proper care; the land, of course, in a clean state.

PARSNIPS.—Up of course, or just at hand. Let the weeds be kept down, and "single out" betimes.

POTATOES.—Those that *will* thrust their heads through the soil in the end of April will require a cap, or at least it is well to furnish them one, and this may be done cheaply; we merely go over them twice, and with a rake or hoe draw as much of the loose soil over their heads as will keep them in "durance vile" until about the twelfth of May, when, accord-

ing to long experience, it is tolerably safe to let them show their faces. If any friend should fancy he can get them earlier, by an earlier display of their abilities above ground, he will, on the average of years, find himself mistaken, unless he use some artificial covering. Let no man fancy they are idle because out of sight; like the mole, they work well in the dark.

PEAS.—Get them well staked, keep down weeds, and plan some stolen crop, if possible, amongst them, or one to raise out of their ruins.

BEANS, THE BROAD.—Soil well up the stem, for fear of storms throwing them prostrate. Look out for the bean weevil and hand-pick. We have not space, or we would tell a tale about these rascals. We will one day bring some of their manoeuvres to light.

BEANS, THE DWARF OR KIDNEY.—Not a cottager's crop; the runner ought to completely supersede them. There is, however, an idea afloat that the latter *must* have long strings, or ten feet stakes. When this idea is got rid of, runner culture will extend. What is more delicious than a piece of bacon boiled in the same pot with runners? A dish for Soyer, we should say. The dwarf beans merely require soiling up. Sow in the first week of May, in a warm nook, on light soil.

RUNNERS.—Planted the last week in April. They are so good natured, that they will climb twelve feet, or stay within three feet of home, which you please. If the latter, pray top them directly they are the desired height; and direct your urchins to pinch their heads off through the summer when their ambition is prompted "to o'erleap itself and fall on t'other side." Manure well, and water in dry weather. Do not suffer any more large pods to remain on these and the dwarf kidneys than you want for seed. Pluck them away, if you give them to the hog.

About Broccolis, Cabbages, Lettuces, Leeks, Spinach, Onions, &c., we have said much in former advices; we must now conclude with a few general observations.

A friend, and one of no mean repute, has this last week, per letter, reminded us of those rocks a-head—the filthy beer-shops. He says that allotments will never carry half the benefits so benevolently intended, if placed far away from the cottages of the holders, especially where beer-shops prevail. His remarks are, doubtless, founded on facts, and we shall not lose sight of such sound and sensible advice. In the meantime, if we have allotment friends and holders who must have their beer, let us implore them to resolve not to sit lounging their time away over it in the beer-house; let them get their beer, *if they will have it*, and away to their work; not by any means permitting themselves to sit down in such places.

R. ERRINGTON.

THE APIARIAN'S CALENDAR.—MAY.

By J. H. Payne, Esq., Author of "The Bee-keeper's Guide."

ALTHOUGH much has already been said as to the necessity of feeding bees, I fear that, from the dull and wet weather of March and the early part of April, many stocks, where a liberal portion of food has not been supplied, will be found to have perished.

BARLEY-SUGAR.—I am more and more convinced, by daily experience, that of all other kinds of food (where honey in the combs cannot be had) barley-sugar is the best, and not only the best and the cheapest, but the safest, and by far the least trouble; for when liquid food is used it is carried down by the bees immediately upon its being supplied and stored in the combs, and the proprietor has no means of knowing at what time the store is exhausted, and a fresh supply required; but it is not so with barley-sugar, for whilst a morsel remains, which may easily be seen, it is certain the bees will not die of want. The best method of supplying it is at the top of the hives or boxes; my plan is to tie a dozen sticks of it together, and after opening the hive at top, to place the barley-sugar over the opening, and to cover it with a garden-pan or a flower-pot, and just before it is all consumed give a fresh supply in a similar way. Persons generally are apt to imagine that as soon as a few blossoms make their appearance in the spring that their bees will not want any attention, which is a very great mistake, as many a young apiarian has this year discovered both to his cost

and disappointment; for, during the months of March and April (and this year far into May, I fear), greater care is required in feeding than at any other time, for the population is then rapidly increasing, and in a wet and cloudy season like the present, no supplies whatever can be obtained but by artificial means.

PLACING SMALL HIVES, &c.—The time will soon arrive for removing all kinds of feeding apparatus from the tops of the hives, and placing in their stead receptacles for taking honey; but it is better not to do it until the stock-hive is full of bees, and want of room appears evident, the bees will then at once enter the small hive or glass, and commence their work immediately, especially if the precaution of fixing guide-combs be taken.

VENTILATION.—It has been my practice for some years to give all the ventilation possible to my stocks in boxes by withdrawing *all* the slides about October, and keeping them open to the end of April; for then no condensed vapour can injure either the combs or the bees, and then shutting them for a week or two before putting on the glasses, so that upon again opening them the bees immediately take possession of the sapers, and begin their work in them.

REMOVING BEES FROM ONE HIVE TO ANOTHER.—I am frequently applied to by beginners for the best plan of removing a stock of bees at this season from an old hive to some fancy one they have chanced to meet with, and I have, in all cases, said that it is a plan I have never either adopted or recommended. Let the bees remain in the old hive, and if it be too unsightly to be tolerated, have a tasty cover of wood or zinc made to fit it, and let them swarm, and put the swarm into the new hive. If a weak one, join the second swarm to it. If not, hive the second swarm in the usual manner, and then, in September, either by driving or fumigating the bees in the old hive, join them to the second swarm.

GUIDE-COMBS are small pieces of worker-combs, say an inch deep, and two or three inches long, fastened to the top of the receptacle for honey before placing it upon the stock-hive. If it be of wood or straw, warming the comb a little, and pressing it carefully upon the post where it is to remain will be sufficient; if of glass, the glass itself must also be warmed. In selecting pieces for guide-combs it is always desirable to take the edges of the combs in preference to pieces cut out of the middle.

THE YEARLY TRANSACTIONS OF THE HEN-YARD.

A PRACTICAL GUIDE FOR THOSE WHO MAY WISH TO KEEP A FEW FOWLS AND FIND THEM PROFITABLE.

MAY.

WHEN the little chickens are first hatched, they are too delicate to be placed out upon the cool earth at once, especially if they are of a choice kind. It is better to put them and the mother in a good large hamper, with a bed of hay or straw well rubbed. Place them out in the sunshine (if you are fortunate enough to have any) with the hamper lid up; thus the old hen can leave her chickens and stretch her legs for a few minutes after her long confinement, if she likes to do so. About the second day she should be put down with some dry dust for a quarter of an hour, that she may have an opportunity of ridding herself of any vermin she may have got while sitting. Supply her often with food with which to feed her young family, I give mine groats, varied by barley-meal mixed with water, broth, or milk; the last must be given with caution, as it is relaxing if cold, and too much the contrary if boiled.

When the chickens are a few days old, the hen may be placed under a coop. A gravel path is a good place for the coop, as the young brood can there easily pick up a sufficient supply of the tiny stones so necessary to assist digestion. If the spot where they are set down is not laid with gravel, a small quantity should be spread under the coop. Take especial care that they are well sheltered from cold wind, for a sharp easterly wind is as injurious to young chickens as to a consumptive patient.

I very early discontinue the use of groats, which occasions some little discontent among the chickens at first. A correspondent to THE COTTAGE GARDENER, signing herself, H. L. K., speaks of them, with justice, as objection-

able. I have never found fine seasonable chickens, that is, those which are hatched in April, May, or the early part of June, go off in the manner H. L. K. describes, but I have found it the case with early and also with late broods. Any food liable to swell in the crop is injurious to young chickens; I think this is the fault with groats. On reading the letter of H. L. K., I walked out in search of a mill which could grind the barley as coarsely as described, and also enquired at the corn dealers' if they could grind some in this manner, but after going to several shops, I could find nothing better suited to the purpose than a little hand coffee mill, a patent invention by the Hill Top Foundry Company, with an adjusting screw to make it grind fine or coarse. This I find grinds the corn too fine, but it is, nevertheless, much relished by the chickens and approved by the mother hens, whose opinions I always consider well worth consulting. If H. L. K. would kindly inform the readers of THE COTTAGE GARDENER, how the barley may be ground as she describes, to the size of a pin's head, I am sure it would oblige many persons.

After this little digression, we will proceed with feeding the chickens. At this age when it is advantageous to promote growth and strength, it is desirable to encourage them to eat; to increase their appetites, therefore, let their food be varied, for which reason I name several different things on which I have found them thrive: boiled corn, boiled rice, either with or without a little cold milk over it, bread thoroughly swelled, oatmeal and barley-meal porridge, sunflower seeds, potato cut small, and any similar food. Once a day they may have a bit of raw beef, or a little piece of cooked meat, or boiled bullock's liver, cut quite small. When about a fortnight old, a little corn may be given to them in addition; oats are best to begin with, and these a good mother will skin for her young ones with great dexterity.

The coops which I generally use are of wicker work, but not of the usual round form; they are a long square, measuring three feet long, two feet wide, and two feet high, with a door at one end. They may be made to order by any basket maker for about three shillings each. I fix the door back and place against it a box, or common dog's house, large enough for the hen to retire into with her brood in case of a shower, and I have never met with one who fails to avail herself of the accommodation. Besides these, I have one round coop for the convenience of fixing the hen to any small space; in bad weather, when one is glad to take advantage of only a fine half hour to put out a brood, this often comes into use.

Until the chickens are quite fledged, it is better to keep them under shelter entirely in wet weather, for a regular soaking seldom fails to interfere with their health. The sooner the hen can be turned in with the other fowls, the sooner she will commence laying again; but the period when this is done must depend on the strength of the chickens, and also on the disposition of the cock. Some cocks will make very kind fathers, even helping the hens to feed their young families, while others will lose no opportunity of ill treating or even killing the little ones.

A temporary mother, under which the young chickens may nestle when taken away from the hen, may be thus made:—Prepare a ball of twine, and cut some very stout fleecy into six inch lengths. Stretch a piece of the twine between two nails, or in any other convenient situation; double a length of fleecy, put the loop over the twine, pass the two ends together through the loop and draw them quite tight; repeat this till you have a long piece of fringe. Then take a piece of coarse embroidery canvass, the shape of the top of the basket (in which you wish to place the chickens), sew the fringe on it in rows half an inch apart, until it is quite covered and resembles a bit of lamb's skin with the wool on. The chickens will nestle into this and receive air through the canvass.

When the hens have brought out their broods, before you allow the nests to be occupied in the same manner again, see that the nests and all the parts adjacent are well cleansed and lime washed; for if the sitters are infested with vermin, they will never do their duty steadily.

Fowls which have been well housed and properly managed, and which have not yet shown inclination to sit, will by this time have been laying without intermission for many months;

it must not be forgotten that in this period they have had to furnish a great number of shells as well as eggs, consequently they are much in want of lime. As easy a plan of giving it to them as any, is to break up a few oyster shells with a hammer or billhook; the fowls will peck up the bits which are small enough to swallow with great eagerness. These hens will also require abundant feeding, and if they are thin, may have barley-meal or middlings twice in the day, in addition to their other food.

WORK TO BE DONE DAILY.

Feed all the stock.

Attend to sitting hens.

Place out the young broods, the hens under good roomy coops, and feed them very often.

Give extra feeding to such fowls as seem to require it.

ANSTER BONN.

THE PAST WINTER AND THE PROSPECTS OF THE FRUIT GROWER.

NOTWITHSTANDING the almost universal expression of "what a mild winter we have had," the first of April found vegetation no further advanced than in the majority of seasons. Now to account for that circumstance doubtless many reasons may be advanced; yet if vegetation had been ten days or a fortnight in advance of what it now is, I doubt not but equally cogent reasons could, also, have been found to account for that. Without, therefore, suggesting any other reasons for the backwardness of the season, than just noticing the unusual absence of sunshine during the whole of March, I will at once set myself to attempt to describe what the season really has been in the part of the country I write from (Kent), and will venture an opinion of what its influences may be hereafter.

Commencing with the autumn, it is only necessary to observe that it was much drier than that period of the year usually is, and what frosts we had were so late, that tender flowering plants might be said to be more blanched to death by the cold fogs and damp than chilled by the frost, so that many beds of flowering plants were dug up while the herbage was as fresh as in September, but the damp had perished the flowers. One of the best plants to stand this baneful influence is the *Cuphea strigulosa*, and it is on that account one deserving especial notice where very late out-door flowers are wanted. As we generally calculate on having severe weather sometime during the winter, beds of *Petunia*, *Verbena*, *Geranium*, &c., are always unceremoniously dugged up. I, however, last year, left some beds of *Calceolarias*, three of which are the old yellow *Integrifolia*, and, though they have never had the least protection, they are as fresh and green as they were in September; and, what is equally of importance, uniform in growth. One bed, in a more conspicuous place, I sometimes threw mats over on nights threatening to be very frosty, but that does not look so well as those wholly unprotected. The darker kinds, partaking more of a herbaceous nature, have not stood so well, and I fear will be gappy. *Verbenas* I find suffer as much from damp as from frost; for while most of the single plants in mixed borders have stood tolerably well, those in beds have mostly all perished. One bed, in a very dry and exposed place, is, however, in very good order, and I hope will be ready to flower pretty early this season. The stems of the small-leaved *Salvia (coccinea)* I think it is called) have endured the winter, and are breaking out all the way up; so, also, are all the *Fuschias*, scarcely even a morsel at the tips is hurt. The large-leaved or *Rose-tinted Geranium* has also stood pretty well, and up to the first of March afforded sprigs and green leaves for bouquets, since then it has suffered much, but I do not think any scarlets have survived. But now to the weather, which, as your worthy correspondents do not seem to notice it much, must have been more severe with them than it has been here, and when we hear of ice-houses being filled there need be no further proof of its having been partial in its visitation.

As I have before said, the autumn was mild. The thermometer only once fell as low as 28° in October, in November (the last day) it fell to 24°, and on the 21st of December it was at 22°, the previous night having been 28°, after which dull mild weather set in, which continued nearly up to the end of January, the thermometer only once falling to 25°, while many nights it stood above 40. February set in with

somewhat clearer days, and nights a little colder, yet seldom below 30°, and only once as low as 22°, which was the lowest we have had during the winter; besides, there had been much less rain than in the average of seasons. We now come to March, which is always an important month, and, here I may mention, that up to the first of March, vegetation was in a forward condition, so much so that great fears were entertained of the after bad weather checking it, or rather injuring the fruit blossom; for it has been checked, and I do not remember ever witnessing so little progress in March as there has been this season, and yet no severe weather. The thermometer only once as low as 24°; but the almost total absence of sunshine, and some cold chilly winds in the beginning of the month, with heavy perishing rains from the middle to the end of it, landed us at the first of April with vegetation only a very little in advance of what it was at the end of February. I certainly never remember so little sunshine in March; and its loss must have told fearfully where forcing is concerned. The evils of sharp frosty nights are in some measure compensated by the bright gleams of sunshine we have in the day-time, but this season we have not had either, and, consequently, the tardy progress; besides which, many things require the useful influences of bright sunshine; *strawberries*, *peaches*, *cherries*, and other fruits in forcing, do not set well unless assisted by that all important agent, whose indolence this season must certainly be deplored. Another thing, the wall fruits do not set well without more or less of the assistance of the monarch of the day, and having now been so long in an expanded state, I think it may fairly be inferred that the generative powers must become debilitated by delay, so that when the assistance does come they have so long waited for, they may be beyond its powers. Thus taking all things into consideration, I have very little hopes of a prolific season for fruit, as, independent of the reasons above given, I think the blossom looks weaker and smaller than usual. This remark, also, holds good with *gooseberries*; so that, in more plain terms, I fear the crops of *peaches*, *apricots*, and *gooseberries*, will be deficient. *Plums* may be better, and I think *pears* have a chance to be good; *apples*, probably, may be an average crop. In giving these opinions, I beg to say, I am guided solely by the appearance the bloom presents; and, although favourable or adverse weather must have a considerable share in augmenting or diminishing a crop, yet I am far from attributing success or failure entirely to these causes alone. A well developed bloom bud, endued with all the energies necessary to produce a healthy fruit, will generally, with the assistance of a vigorous tree, produce one almost in spite of the weather; but to obtain such a bud, we must go back to the past year. However, that subject has been so ably handled by Mr. Errington, that I need say no more here than that I fully coincide with what he has advanced on that very important matter in fruit growing. Still, I am sorry to say, that I do not like the appearance of any of the trees I have seen this season; one evil of which is, that the crop of last year was, perhaps, in many cases allowed to be too heavy, and a consequent half-barrenness I fear will follow. Perhaps I may be wrong; I only pen these observations in order that others, in other localities, may judge for themselves, whether a mild winter, or even a mild spring, will always command a fruit crop. As a proof of a contrary effect being sometimes produced, I may mention that all the early blossoming fruits were in abundance here last year, while we had the thermometer as low as 17° and 18° on the 26th and 28th of March, lower by 4° or 5° than we have ever had it all this winter. Certainly, a dry atmosphere tended materially to counteract its effects, but I attribute more to the vigorous state of the bloom; the crop of the preceding year for small fruit being next to a total failure. This year I fear the case will be reversed.

While speaking of the probability of partial failures in the fruit crops, let me add that of another article of, perhaps, more national importance, though out of place here, but having once passed the rubicon, and ventured on the hazardous speculation of prophecying evil, I can only add another item to my offences by putting down the *hay crop* of 1851, as also under an average. In this case, I admit, the weather that is to come will have more effect on that than on the fruit crop. Yet taking the chapter of chances for what may be their average worth, I yet think that grass which has been growing uninterruptedly for the last thirteen

months, is not in so likely a condition to continue so, as when it has had a period of rest; certainly favourable weather and other circumstances may overcome that supposed inability, at all events; I shall be most happy if I am wrong in all my forebodings.

L. M. N.

TREES SUITABLE FOR PARK SCENERY.

(Continued from page 41.)

THE GROUP, OR CLUMP.—Although some writers make a wide distinction between these two objects, yet they would be puzzled to define their difference at planting time; the case is, that a group is only a more poetic name for a greater or less number of trees congregated together than the formal name “clump.” To carry the illustration further, we may say that the usual way of planting a patch of ground with trees, and surrounding them with a fence, more or less irregular in outline, is certainly correctly named a clump, and until that fence be removed, and judicious thinning, &c., applied to the trees so enclosed, they can have little claim to the more classic title, “group;” so we may take it for granted that the one merges into the other as age advances; and will, therefore, proceed at once to the planting.

In this feature of park scenery, a much greater variety of trees may be introduced than for single trees; many of the less robust kinds might here find a little shelter by the side of (not under) their more free-growing brethren; and such as the tulip-tree, acacia, the copper beech, and others, that seldom make much show alone, would form excellent adjuncts to a clump. The wild cherry, too, is by no means a despicable tree, and when in flower contrasts beautifully with other things around it; for instance, the copper beech. In the group, the great feature is to make the whole appear harmoniously to the eye; to effect which some insist on only one kind of tree being used; but that is carrying the matter to the opposite extreme; certainly an incongruous mixture is bad, and for that reason we exclude most of evergreens from the clump. An evergreen oak might be admitted, if one was wanted; but avoid the upright-growing firs, and we might also add the Lombardy poplar, and similar things.

THE SCREEN OR BELT.—Although these objects have a widely different signification, yet, as the trees applicable to both are alike, we here class them together, the latter being merely an elongation of the former. In this feature of the landscape recourse must be had to trees most likely to thrive best in the places allotted them; and, for the screen (which is a small plantation made to hide some offending object), a considerable mixture of evergreens may be used—we mean fir trees—and there would be no great harm if the whole were of that kind; but in the continuous belt, deciduous trees of many different kinds may, also, be used, but we certainly object to an indiscriminate mixture of them with spruce and Scotch firs, and the like. When firs are used let them be mostly alone, hiding or sheltering any particular object that may require their darkening shade. An occasional silver or spruce fir towering above a mass of deciduous underwood, is certainly in good keeping; and, likewise, tall Lombardy and other poplars are useful in breaking that monstrous outline which belts so often present when viewed in connection with the horizon; but they must not be regularly dotted over, or the evil is equally bad. For belts which are neither more nor less than plantations on a small scale, we shall not presume to recommend any particular kind of trees; those which in the locality thrive best, and afford the greatest return as profitable planting, are the most suitable for planting in this department; and the description of trees which in one place realize the greatest amount of profit, may be wholly unsaleable in another, therefore, no rule can be laid down applicable to all cases.

In drawing our remarks to a close, we again impress on any of our readers who may be about planting an avenue, to consider well what we have urged in regard to the width such a thing ought to be; in fact, it was the many errors we have seen in that way that led us to commence the present paper, and we have every reason to believe that all who have had experience in the evils of avenues planted of medium width, will bear us out in what we have said against such planting, and now that avenues are rising again into importance, we trust that in raising our warning voice against a certain kind, we shall not be writing in vain.

S. N. V.

FLOOR-BOARD FOR HIVES.

THE floor-board that we use is similar in principle to that described at page 19 of "Taylor's Bee-Keeper's Manual," 3rd Edition; but lest your subscriber should be without that excellent little work, I will describe it as well as I can. It consists of two circular pieces of wood, one twenty inches in diameter and one in thickness, the other sixteen inches in diameter and barely half an inch in thickness; the smaller screwed down upon the larger in such a way that the grain of one piece may be at right angles to the grain of the other. Before the small piece is fixed, a bit two inches wide at each end, four inches long at the side next the centre, and having a chord five inches long at the circumference, is cut out of it, and an inclined plane formed from the opening thereby made towards the centre of the piece, the operator taking care to bear a little to the right and left as the paring away progresses, so that the plane may be eight or nine inches broad where it meets the level of the board. This forms the entrance; by the use of small blocks of wood its width can be handily altered according to the strength of the hive and the state of the weather. Underneath the thick piece are two clips, each nearly the length of the diameter of the thick piece, and about two inches deep, and one inch and a half broad. These clips are screwed firmly to the thick piece at right angles to the grain, and are, therefore, parallel with the grain of the thin piece. These assist in keeping the whole from warping by the exposure to which it is subjected, and are placed just wide enough apart to fit over the cross piece of the post on which the board is to be placed. A wedge of thin wood between the cross piece and one of the clips keeps the whole steady. The main difference between the above and Taylor's consists in its being formed of two pieces instead of one (setting aside the clips, which in Taylor's are only used "to prevent warping and for convenient lifting.") It is, in my idea, thereby more easily made by amateur carpenters, and more effectually prevented from warping.

There is nothing I like so well for a stand as an old nine

gallon beer barrel, with the ends, or one end, out. Such things are often knocking about the yard waiting their turn to be burnt, and it has been my good luck to rescue several from such an ignominious fate. Painted up a bit, and plunged about eight inches in the ground, they not only look neat, but form such a broad basis that old Æolus vents his rage upon the hives in vain.

The jacket that stands upon the floor-board is the simplest thing in the world; merely a cylinder of zinc, seventeen inches in diameter (*i.e.*, an inch broader than the thin piece of the floor-board) and eighteen inches high, with a stout rod of iron run into it round the top to give it stiffness. Upon this is placed the milk-pan. At the bottom a piece is cut out seven inches broad, and about six inches high, and round this opening a piece, about three inches broad, is soldered to form a kind of awning to protect the entrance to the hive, to some extent, from the sun, and altogether from the rain. The jacket may be made of old oil-cloth, stiffened with ribs of wood; but, of course, will not then be so durable as if made of zinc or tin.

The hives I use are common flat-topped straw hives, with a 4-inch hole in the centre. In order to work four glasses, if expedient, at once, I have a circular piece of wood, nearly the diameter of the jacket, with two 2-inch and two 4-inch holes in it, raised upon four pieces of wood an inch and a half in depth, which are nailed to the under side of the circular piece, and form a square sufficiently large to include within its area the four holes. This stands on an adapting board, with a 4-inch hole in the centre, placed over the 4-inch hole in the hive. The mode of operation is obvious; the apparatus can, with a little ingenuity, be adapted to ordinary round-topped pieces. In cold weather a large piece of cloth can be thrown over the glasses. In winter, when only one glass for condensing purposes is required, a spare hive will cover it. The circular piece being nearly the diameter of the jacket, any light that may come from the opening at the bottom can be easily excluded by a piece of list, or something of the sort. When, however, a cloth is over the glasses, nothing at all will be required.

RESULTS OF BURYING BEES.
WINTER 1850—51.

Number.	What sort of hives have been buried? Swarms, casts, old stocks, or preserved bees?	Date of interment.	Whether in earth, and in what kind of soil; or beneath a shed, out-house, on stone floor, or under leaves.	State of weather at the time of interment.	Probable age of queen.	Weight of hives when buried, exclusive of hives, &c., as near as may be guessed.	Weight of contents of hive when dug up.	At what time was the stock, or stocks, disinterred.	State of hive on being disinterred.	What perceptible consumption of food.
1*	A swarm in a straw hive.	Nov. 28, 1850.	Ground, on a stone floor; in a gravel soil; two feet from top of hive to surface, with three inches of ashes at the bottom of hole; a tube, quarter-inch bore, placed at the entrance communicating with external air; and hive previously encircled with straw bands.	Sharp frost at 8 p.m.	One year.	12 lbs., exclusive of hive, &c.	8½ lbs., exclusive of hive, &c.	April 1, 1851.	The hive perfectly dry, excepting at the lower parts, where it was mortared to the floor stone.	3½ lbs.
2†	A swarm, straw hive.	Nov. 28, 1850.	Side by side with No. 1, the only difference being its having no tube communicating with external air.	Sharp frost at 8 p.m.	One year.	14 lbs., exclusive of hive.		April 1, 1851.	As No. 1.	
3‡	A cast, straw hive.	Dec. 4, 1850.	In the hay-loft, under dried leaves, on a stone floor, with a tube, quarter-inch bore, at the entrance, communicating with external air.	Damp, foggy, at 8 p.m.	Young.	10 lbs., exclusive of hive, &c.	1 lb., exclusive of hive, &c.	April 2, 1851.	Hive perfectly dry. The combs mildewed and in a wretched state.	9 lbs.
4§	A cast, straw hive.	Dec. 4, 1850.	Side by side, and just the same as No. 3.	Damp, foggy, at 8 p.m.	Young.	6 lbs., exclusive of hive, &c.	½ lb., exclusive of hive, &c.	April 2, 1851.	Hive dry, comb damp and mildewed.	5½ lbs.

FURTHER OBSERVATIONS.

* Very many of the bees were dead and putrid, the combs likewise much damaged with mildew, and evidently the bees have died of dysentery. I do not think I shall be induced to bury any more, certainly not without allowing plenty of ventilation, with a good inch-bore tube placed at the top of hive, *not* at the entrance.*

† I could not weigh the hive, as the combs had all fallen down on to the stone floor; nearly all the bees dead, many been dead for a long time, as there was a great quantity of maggots and flies amongst the dead bees; many quite decomposed. All are now dead, April 7. Other bees robbed it of all the honey after it was placed upon its stand in the apiary.

‡ A few bees alive, the rest dead, decomposed, full of maggots, and altogether in a miserable state.

§ All the bees dead, decomposed, and full of maggots.—EDWARD KINGSFORD.

* Since I sent you my report on the "Wintering of Bees," I am sorry to say that No. 1 hive has died; and on examining the contents I found all the bees but about 100 dead; the queen had evidently been dead some time. There was about five pounds of honey in the combs, which were quite mildewed.—EDWARD KINGSFORD, *Sunbury, Middlesex.*

RESULTS OF BURYING BEES.

WINTER 1850—51.

Winter treatment of bee-hives, communicated by "A Country Curate."

What kind of hives? Whether swarms, casts, old hives, or preserved bees, have been buried or otherwise wintered?	Probable age of queen. Has she ever swarmed?	Date of wintering the bees, and state of weather at the time.	State here the peculiarity of each plan of wintering adopted.	Was anything done to them in the winter, and if so, what?	Original weight of contents of each hive, including bees, comb, and food also.	Weight of contents on restoration to the summer stand.	Perceptible diminution in weight during the winter.	If buried in the ground, in what soil? at what depth? and in what aspect? North best.	What system of ventilation, if any, was adopted?
E. Stray swarm of June 27th, 1850.	Cannot tell; supposed cast, and therefore the queen young.	Nov. 8; mild, dry weather.	Buried in the open ground. See COTTAGE GARDENER, vol. v., page 120.	Nothing.	11 lbs. 7 oz. Gross weight 18 lbs.	Dug up on the 1st of April; 3 lbs. short of an ounce. Gross weight 9½ lbs.	8½ lbs. in four months and three weeks.	In a gravelly soil and in an open plot of ground, facing no particular quarter; three feet deep.	None, save only that the hive was surrounded with slates overlapping each other, and sloping away from the crown. The whole also was surmounted with a large milkpan, before the hole was filled up.
H. Cast of the latter end of June, 1850; exact date of issue unknown.	Born last spring.	Oct. 29; cold, dry weather.	Suspended from a Salton balance in a dark hay-loft.	On the 6th of March the hive was exposed in a sunny place for the day, to give the bees an airing. Suspended again	15 lbs. 4 oz. Gross weight 23 lbs. 5 oz.	Finally liberated on the 11th of March. 8 lbs. 4 oz. Gross weight 16 lbs. 5 oz.	7 lbs. in four months and eleven days.		Hive simply hung up on a board having a trap-door beneath it, which was occasionally left open, and any dead bees (seldom more than two or three found) removed. Entrance always fully open.
B. Cast of June 18, 1849; did nothing in 1850.	Born in the spring of 1849.	Oct. 29; cold, dry weather.	Left on its summer stand, facing the direct east.	Weighed regularly at different times.	17½ lbs. Gross weight 29½ lbs.	Finally weighed April 3rd. 11½ lbs. Gross weight 23½ lbs.	6 lbs. in five months and four days. Eat only ½ lb. of food in March.		Hive entrance left open.
Z. Prime (artificial) swarm of May 11, 1850 (not my own).	Unknown; but supposed born in 1847 or 1848.	Nov. 8; mild, dry weather.	Left on its summer stand, facing due S.E.	Ditto.	27 lbs. Gross weight 37 lbs.	Finally weighed April 4th. 18½ lbs. Gross weight 28½ lbs.	8½ lbs. in four months twenty-five days.		Ditto.
F. Artificial stock of August 5, 1850; fed entirely on a beer and sugar and honey mixture. Preserved bees out of four hives.	Unknown; probably born in the spring of 1850.	Oct. 28; cold weather.	Left in its summer situation, in a window, with shade from the sun, facing S.S.W.	Ditto.	14¾ lbs. Gross weight 22¾ lbs.	Finally weighed April 2nd. 9¼ lbs. Gross weight, 17¼ lbs.	5½ lbs. in five months and four days.		Hive entrance in general closed at night, and frequently for some days together; once for nine days, but many bees died.

FURTHER OBSERVATIONS.

The buried hive (E), on disinterment, was found slightly covered with mildew externally, and there was much black dirt on the bottom board, but the after evacuations were of the usual colour. The bees appeared in prime health, and were shortly flying about in crowds, for the day was fine and mild. About 200, or rather less, were found dead in the pit; these had probably become impatient of confinement, and so had crept out and perished, not being able to find their way home again. The bees have since been busy pollen gathering. As, however, the hive was light, and the business of feeding would have been tedious, I set the hive over F (whose population was small) on the 8th of April.

During the first three weeks after the suspension of hive H, several young grubs, in different stages of forwardness, were cast out of the hive dead. Their own dead also the bees invariably rejected, but there were not many. Some few flew out and were lost. They carried pollen actively within a short time of their liberation, on the same day, and they have been very busy since, while the population is very large. Under these I set stock B on the 9th of April, as their own stores must have begun to fall short, and this hive contained plenty of honey though few bees.

Of hive B the population was actively collecting farina so late as the 14th November, but they have been quite idle this spring.

Z, artificial swarm, is now the most active stock in the apiary, and promises great things. I cannot help thinking that the old queen must have died some time last summer, and that a young and vigorous queen has taken her place, otherwise she would now be drawing near her term of life. This is the swarm forced on the 11th of May, 1850, whose history has been given in THE COTTAGE GARDENER.

I tried several experiments with F last autumn and in the winter by confining the bees, often to the entire exclusion of the external air, but I destroyed many hives by so doing, and the population is but thin in consequence at present (April 8th), though very active. Saw bees enter this hive with pollen so early as the 12th of January this year, and several young bees were cast out dead on the 25th of February.

I forbear to add in this place any comments on the above facts; perhaps you will allow me to say a few words when all the papers sent out by me in the autumn have come in.—A COUNTRY CURATE.

RECEIPTS FOR THE COTTAGER.

THE comforts of the poor might, as I have before observed, be much increased if a little trouble were taken by the "gude wife" in varying the humble meal. Change of diet is both wholesome and agreeable; we see it is necessary for animals, and, I am sure, every one feels it is so for man. Sheep and cattle, if kept long on one piece of land, get "pasture sick," and willingly change it for the coarsest herbage. Thus if people sit down, day after day, with nothing before them but bread and potatoes, they must become tired of it. Do not think I am trying to make you discontented with your lot. No: I well know that contentment is great gain, and I also remember that we are com-

manded to be content with such things as we have; but at the same time it is our duty to make our homes (be they ever so humble) as comfortable as our means will admit. The hard earnings of the husband should be laid out to the best possible advantage by the wife, and his cottage home made as comfortable and happy as it can be. Happiness, it is true, does not consist in having a good dinner; for "Better is a dinner of herbs where love is, than a stalled ox and hatred therewith." Yet of this I am very sure, that much unhappiness would be spared if the arrangements of the cottager's fire-side were more studied. Nothing drives men so quickly to the public house as an untidy, mismanaged, home. And now, having said so much on what ought to be avoided, I will give you a few hints on what I consider the

most economical food for a labouring man's family. Butcher's meat is now so cheap, that I am surprised to see it so little used. You may depend upon it that a shilling's worth of meat is much better economy than anything else at the same price. I do not mean that you are merely to roast or boil it, and then eat it; but if a pound of meat, at 4d., is boiled down with vegetables, and a pound of rice, at 1½d., you will find a good wholesome meal is ready for a large family. I have before given receipts for soup, and also for dressing sheep's feet, which in the country can be bought for a penny each; and, as I am convinced that you will find them both palatable and economical, I very much hope that a trial has been given them. I will now, therefore, say a few words on two articles which, I think, are much neglected by the cottagers of England. These are, *rice* and *oatmeal*. The latter is fully appreciated by the Scotch: the children there "live and grow fat" on oatmeal, and I can answer for its being most wholesome. The coarse oatmeal is very cheap, and easily procured. Breakfast is the best meal at which to eat it. A pint of oatmeal will make a sufficient quantity of porridge for a good-sized party. It should be mixed with cold water gradually until quite smooth; a quart of water to a pint of oatmeal is about the right proportion. When well mixed put it into a saucepan and boil it for a quarter of an hour, stirring it well during the time it is boiling. It should be eaten with salt, and if a little milk can be spared it will be a great improvement. If it is used for dinner, it should always be mixed with a little cold broth instead of water, and for that meal half the quantity of oatmeal is sufficient.

There are numerous ways of *dressing rice*, and you will find it a favourite dish with your children. Before using it you should soak it two or three hours in cold water; by so doing you save time and trouble, as when soaked it requires much less boiling, and as a saucepan must be watched this is an advantage. One pound of rice is sufficient for two gallons of broth,—you can buy rice quite good enough at 1½d. a pound (sometimes even cheaper); you will, therefore, soon find out how much cheaper it is than always eating bread.

The following receipts will vary your cookery and lower your bills:—

Rice Stirabout.—Take half a pound of rice, and half a pound of Scotch barley; soak them for two hours in sufficient water to cover them. Put them into a saucepan with one gallon of water, three tablespoonfuls of treacle, and a pinch of salt. Let it all boil together till the rice is quite soft, and you will find on turning it out an excellent breakfast for your little ones.

A nice cheap *supper dish* is made in the following way:—Soak one pound of rice for two hours. Put it into a saucepan with three pints of water; when it has become a thick paste add one pint of skim milk, four tablespoonfuls of grated cheese, a little pepper and salt; stir it well together, and when it has boiled up it is ready for the table.

If skim milk is easily procured, you will find rice plainly boiled in it, with the addition of a little treacle, a very excellent substitute for bread. Bread is, certainly, "the staff of life," but still I do not think it either profitable or wholesome to banish other food from the table. I know many of the poor living near me feed their children almost entirely on bread. A slice of bread certainly satisfies hunger, with very little trouble; but that consideration ought not to enter the head of any one to whom God has given the management of a family. Nothing can be done without exertion and trouble. And surely a clean, comfortable, well-ordered cottage is worth some trouble,—surely a happy family party is worth some exertion! No home can be comfortable unless the wife strives all she can to make it so. When once the determination is made to struggle against the love of ease, the results which follow will fully compensate for the extra trouble which has to be taken; and the cottage at whose head is a managing, tidy wife, becomes the admiration—nay, even the envy—of the parish.—A FRIEND.

TRANSPLANTING LARGE TREES.

I HAVE read with pleasure what Mr. Beaton has written on various matters in THE COTTAGE GARDENER, particularly

as to the making of walks and transplanting of trees, and so far my observations enable me to form an opinion, I quite agree with what he says; but as to transplanting, I fear Mr. Beaton's method of introducing a truck under the tree would not, from the character of some ground, be found practicable; and if that be shown, then a difficulty must arise in carrying out the course he advises.

My garden is about an acre, on the north-east border of Charnwood Forest, and eleven years ago the greater part of it was used as a stone-quarry. In some parts only the surface stone was got, and in others it was got two yards deep; but in those parts there was not much rock, the ground being composed of five-sixths of stone. The surface is very unequal. I got in much soil, and roses, rhododendrons, laurels, pinuses, and, indeed, almost anything grows remarkably well. Trees which were planted nine years ago I have removed, and found that the roots had got amongst the stones, and close down upon a rock, which was so near the tree-root as to render it impossible to get an opening under the centre of the tree, one foot wide and three inches deep, or, indeed, any opening whatever.

I commenced breaking the ground at the extremities of the roots, and carefully worked a way under them until the soil left round the stem was about three or four feet in diameter; then the roots turned back obliquely, protected by straw, which was surrounded by a waggon-rope; the tree was next heaved to loosen it, and then drawn forward on a strong plank, under which were two poles, then raised by legs and pulley, placed on a stonemason's truck, moved to its destination, and lowered by the pulley. This was my own contrivance, never having seen any tree other than my own removed, nor any machinery for the purpose; and, being only an amateur, I shall be glad if Mr. Beaton, taking into account the stony character of the ground, can suggest anything more simple and better for the purpose. The tree was too heavy to be lifted by men, or carried by them when raised.

J. G.

PROFITS OFF SIX AND A HALF ACRES.

At page 221 of our 4th volume, we gave a statement furnished us by the proprietor, showing that he had realized from the above-named space a profit of £60 in the year 1849. As an evidence of his impartiality, we now publish his balance-sheet for 1850, showing a profit from the same plot of barely £14. The average profit of the two years is sufficiently satisfactory, and we should observe that the oats were severely injured by the Wire-worm.

EXPENSES.		RETURNS.	
	£ s. d.		£ s. d.
To twice ploughing 6½ acres at 12s. per acre	7 16 0	1½ acres of rye, cut green	9 0 0
To 16 sacks of potatoes for planting, at 10s. per sack	8 0 0	To 20 tons of wurtzel ..	20 0 0
To planting 2 acres	15 0	4½ tons of potatoes, at £3 10s.	15 15 0
To cutting plants	5 0	3 tons of chats	3 0 0
To hoeing and moulding	1 5 0	27 qrs. 6 bush. oats, at £1 27 15 0	8 15 0
To 6 bushels of oats, at 2s. 6d.	15 0	8½ loads of straw	2 2 6
To drilling and harrowing 2½ acres	15 0	Cabbage plants sold on the ground	£86 7 6
To 4 bushels of seed rye	1 0 0		
To sowing and harrowing 1½ acres	5 0		
To 12 loads of manure ..	6 0 0		
To planting 1½ acres of wurtzel, part on rye ground	5 0		
To thinning and hoeing	15 0		
To cutting 2½ acres of oats	1 5 0		
To carting home	15 0		
To taking up 2 acres of potatoes	3 0 0		
To taking up wurtzel ..	1 0 0		
To threshing 27 qrs. 6 bush. of oats, at 2s. 6d.	3 9 4½		
To rent of 6½ acres at £4 26 0 0	6 10 0		
Tithe and taxes	5 0		
To trimming hedges ..	7 6		
To small seeds	1 10 0		
To planting cabbage ..	10 0		
To twice sowing turnips and harrowing the ground	10 0		
	£72 7 10½		
		Profit on the whole	£13 19 7½

GRAFTING GERANIUMS.

A few years ago I grafted a number of Geraniums, and now enclose you a note of all I recollect about it. All the scions took at once, with the exception, singularly enough, of two or three variegated sorts, as in your case. They were done in the cleft manner, when the stock was growing strongly, but before flowering-time; say about now, or a little later. The stock was cut back to where the interval between the joints might be about an inch and a half, *i. e.*, not too close to the region of crowded basal buds, or too far into the less organized and longer jointed part. The stock was cut off just above a leaf, which was retained as a vitality pump till further orders. The scion was of wood, still more short-jointed, and of that degree of maturity when a faint tinge of brown was just stealing over its green youth. Its nose was nipped off, to inculcate patience and preserve discipline. It was then inserted, bound and clayed, kept shaded and syringed whenever I came within shot of it. The claying I found necessary, the cleft method not, as the leafless side of the split stock invariably perished, and the common splicing method is easier and as certain. The scion will now go through all the phenomena of a cutting, the leaves will keep green awhile, unless by your fault, and will fall off as the process of granulation commences, then swell the buds, and the heart of the propagator, and a good growth made in a few weeks from the graft, which will flower strongly next season. I have done them, however, at several seasons; one, I remember, in September. You, as a practical man, best know that the state of the plant is of more consequence than the day of the week in these matters. Seedlings make the best stocks. One of these run up to two or three feet by rich growth; and pinching out of laterals makes a beautiful standard plant, grafted with six or seven sorts, the second year, when you have formed a head to receive them.

THORNEYCROFT.

[We are at all times glad to receive such practical communications, and shall be right glad to hear from you when and as often as you please.—ED. C. G.]

WINTER CONSUMPTION OF BEES.

I HAVE seven stocks of bees, five of which have been fed during the past month (March); the loss is as follows:—

- | | | | |
|-----|------|-------------------|-------------------------------------------------------|
| No. | I. | 1½ lb. and 3¼ lb. | food, Mr. Golding's syrup. |
| " | II. | 1 lb. | not fed. |
| " | III. | 2¼ lb. and 2¼ lb. | food, Mr. Golding's syrup. |
| " | IV. | 1¼ lb. and 2¼ lb. | food, ditto. |
| " | V. | 1 lb. and 2¼ lb. | food, ditto. |
| " | VI. | 3¼ lb. | bees placed (7th August last) in empty hive, and fed. |
| " | VII. | 2 lb. and 1¼ lb. | food, Mr. Golding's syrup. |

The bees fed have consumed more food than those not fed.

The stocks fed on prepared food in autumn, have consumed more food than those left with their own honey. No. II. was not fed in autumn or this spring. No. V. was not fed in autumn.

How do you account for this? No. II. now weighs 20¼ lb. Have I, by feeding, put the bees into a too active state, or is No. II. in a bad state? B. B.

[It does certainly appear that, by feeding, the bees have been put into a "too active state," and, therefore, they consumed more food than they would otherwise have done. No. II., I should consider in a very healthy state; but that may be ascertained by standing a few minutes beside the hive on a sunny day, and if pollen is carried in freely, they are in a prosperous state.—J. H. P.]

GUTTA PERCHA MEMBRANE.

I enclose you a sample of "Gutta Percha Membrane," and have to suggest an idea or two in reference to its applications for some gardening purposes. I find much useful matter in your pages relative to grafting, budding, &c., and it occurred to me, that the material alluded to, would, on account of its firmness, elasticity, semi-transparency, and impermeability to wet, be peculiarly adapted for such operations; it also occurred to me, that it might be usefully employed in the stove or greenhouse, whenever syringing was resorted to, for the covering over plants or

individual flowers, which might otherwise require removal during this operation. The material, you will perceive, is very thin and light, and the price moderate; mine cost me 1s 4d per yard, and the width of the piece is about twenty-seven inches. I have no doubt it might be had at the dépôts of the Gutta Percha Company at a less price, as I had mine at "second hands." The purposes for which, at present, it is used here, are in surgery, for "water dressing" of wounds, &c., also by dress-makers and bonnet-makers, as an intervening material to prevent the soiling of the fabrics by perspiration; the material hitherto used for these purposes is the "oiled silk," which is more expensive, and this circumstance alone causes the latter article to be superseded by the other.

I would suggest that in grafting, budding, &c., a strip of the membrane be "torn" of the width required (for it tears readily lengthwise), and begin by closely wrapping two, three, or four times round the branch operated upon; cut off the superfluous portion, and wet with mineral naphtha the end of the strip which is round the branch, after which, tie round with twine until it is dry, when the twine should be taken off again. As these are "mere hints, unaccompanied with practical experience," any farther than simply concerns the nature of the material itself, I merely give them in hopes to hear of some one trying the experiment.

We have a climbing rose in this neighbourhood (rather a gigantic one too), called, from the person who raised it, the "Blair Rose." It was obtained from the seed of a remarkably large fruit, or hip, and the tree raised from it surpasses all others in the neighbourhood for a noble appearance when in flower, and is very generally admired; the season's shoots are twelve feet or more in length, and it is easily raised; the flowers are of a purplish rose colour.—W. L.

[We accept your offer of a cutting with thanks.—ED. C. G.]

MATERIALS FOR DRAINAGE.

I see a correspondent recommends cinders for pot-drainage; such a make-shift has been recommended in Harrison's Floricultural Cabinet some time since. We use a great quantity of drainage here, and our practice is, in bad weather, to collect all the pieces of bricks, tiles, and crocks, and beat them small with a large hammer. We then take a fine sieve and sift away the dust; we then sift it through a sieve with ¾-inch mesh, and thus have two samples of drainage, fit for every purpose, always ready. We find this answer for every kind of plant better than any other, except charcoal. We often mix a small quantity of this with the mould, for plants that require extra drainage, and judge that it answers well by the healthy appearance of the roots.—C. C.

TO CORRESPONDENTS.

TO ALL OUR CORRESPONDENTS.—We are delighted to hear from you all as often as you need information, and no amount of labour thrown upon us wearies us, so long as we know we are useful; but in return you must be patient and courteous. You must not, like our friend *Ivy*, get red in the face and black in the pen because our replies do not come quite so soon as either you or we could wish. We answer you all as soon as we can give the best procurable information, because, not being "up to everything," we have continually to seek better counsel; this causes delay; and this, added to occasional deficiency of space, and our printing arrangements, renders it impossible for us to reply to any one before our second number after a question arrives.

CONSERVATORY, &c. (J. J. B., Birmingham).—It is impossible, without seeing the spot, to form a safe judgment of the somewhat complicated affairs about which you write. It is by far the safest course in such cases to employ a professional man, and the extent of your case, together with the possibility of "sinning in haste and repenting at leisure," will, we think, justify our opinion. We will, however, speak to a point or two: if we understand your first plan, the stable and vinery will be presented to the drawing-room window. No stable in front for us; it is astonishing what faults occur this way, leading to afterthoughts derogatory to the scheme, yet necessary. Your stable will require to be hid, and planting, or some contrivance adopted at variance with that freedom of lawn which is one of the most important elements of the *otium cum dignitate*. Your second sketch looks better, and we think that a ridge and furrow roof, a Paxtonian one, might be carried continuously through both conservatory and vinery, presenting a uniform frontage elevation, from which, in the case of the vinery, a slant roof might be made to rise until it meets with the shed behind. Our space will not permit us to go into working plans.

VINE PRUNING (W. H. B.).—Your plan is often resorted to; if, however, you can carry crop enough, and your spurs are "at home," do not leave any but the fruiters. Let your fires go out in the morning; rake clean, and light again at two o'clock, A.M. Vines and cucumbers ought not to be together, but they may be grown so; the cucumber wants too much atmospheric moisture for the vine.

CALLA ÆTHIOPICA (Lady-bird).—This, so usually called an Arum, is a plant that generally blooms freely enough, both in pots and out of doors, plunged in water. It requires a long rest, and may be rested either in summer or in winter; we bloom one set of them in April and May, and a second set from October to Christmas. They yield to forcing in the spring. We use strong rich loam for them, and give them abundance of water while they are in growth, and we let them go gradually to rest as the leaves turn colour, and keep them quite dry for three or four months, and we believe we could have some in bloom every month in the year. More minute details will be seen in our first volume. We never heard of the scarlet geranium called *Baron Hugel*, but there is no end to the varieties. Some do well every where, while others will only succeed in particular soils. A small leaf, with a very dark horse-shoe mark, is a great recommendation, and we recommend it on your authority.

GRUB IN RASPBERRY BUDS (W. Barker).—The little red grubs, or caterpillars, which burrow into the young shoots of your raspberry, are those of a small moth belonging to the family of Tortricidae, probably *Tortrix Holmeana*. We have not, however, hitherto seen any instance of such a kind of destruction, nor do we think any such has been recorded. The eggs were laid in the previous summer on the branches, and, doubtless, covered with gluten, in patches. We can suggest no other remedy than hand-picking, or rather pressing the buds as soon as they droop, as extensively as possible, and so prevent next year's mischief. You will probably hear from Mr. Westwood on the subject.

LARGE FLAT-TOPPED HIVE (A Journeyman Cabinet-maker).—This, in which "A Country Curate" put his first artificial swarm of last May, is almost identical with that figured at page 24 of the last edition of Mr. Taylor's "Bee-keeper's Manual" (which has since been published), only it is much larger. It will be seen, on a reference to that work, that the loose wooden crown-board of the hive (which is straight throughout, and open at each end,) is made of two circular smooth boards—each, say of half-inch stuff, glued together, the grain of the wood crossing, to prevent warping. The upper piece of wood, also, projects one inch over the hive-rim, while the under side "is cut so as to fall within the minor diameter" of the hive. The advantage of this peculiar crown-board is this, that "on removing a full cap," or plundering a full hive, "the combs can be separated from the sides with a knife or spatula, when there will be no difficulty in lifting the crown-board from its place, with the combs suspended from it, in a perfect and unbroken state," instead of cutting them away from below. A Country Curate says, "Of much the same construction, and on a similar principle, was my large hive; but as the advantage above-mentioned is but of little comparative practical value, save in supers or caps of small size (in large hives I fear it is likely to be of little use, for the combs being so large and heavy, will be in danger of breaking away from it on lifting them out, as, indeed, happened to a friend of mine last summer), I do not now recommend it. In my lately constructed hives, therefore, (of which a figure and full description will be found in "The English Bee-keeper," just published by Messrs. Rivington,) with a view to a still greater improvement, I have made a slight alteration in the construction of the crown-boards. Like the former, they are made of two pieces of wood glued together, but, instead of the under piece fitting into the minor diameter of the hive, it rests upon the hive-rim, equally with the upper piece, being of exactly the same diameter. This kind of board, it will be seen, fully secures the advantage of that of Mr. Taylor, while its chief use is this, that when a prime swarm in a large hive gets very heavy (and every good prime swarm should be put into a large hive, if it is to be kept for stock), and it seems desirable to rob it of part of its stores (a stock hive ought not to weigh above 23 lbs. of contents at Michaelmas), which are always to be found at the upper part of the hive, the board may be removed, after passing a spatula right underneath it, so as to sever the comb from its attachments to it. In this way (the bees having previously been driven out *pro tem.*), the treasures of the hive are disclosed to view, and as much of each comb as is thought desirable may be scooped out, leaving the lower part of the comb as clear gain to the bees. Where a hive has bars, which are always useful, every comb can be got at individually, without disturbing the others, after removing its particular bar; or the crown-board might consist of two leaves, united by hinges, of which only one need be lifted up at a time, so as to get at the contents of half the hive. The board is kept in its place by being secured down directly to a thick hoop, fastened to the outer edge of the upper part of the hive, or by means of hinges, of which one leaf is secured to the hive-top, while the other is fastened to the hoop externally. My hive is fifteen inches in diameter, by eight or nine inches high."

ASPECT FOR BEES (Elise).—We recommend south in preference to any other aspect. Each of *Payne's hives* should have two, at least, of the small depriving hives to work it properly.

QUEENLESS BEES (B. S. P.).—"Watching my hives the few fine days we have had the last week or two, and the activity of the bees at the different hives, carrying in their pollen, I observed one, which hitherto I had considered to be the best stock in my apiary (being a very large and early swarm of last year), was, amongst all the bustle of its neighbours, idle—half a dozen bees basking in the sun at the entrance, stretching their legs, as it were, after a long period of idleness, apparently with no object in view, were the only signs which presented themselves of their existence. It is evident, I think, from this, that no breeding is going forward, from, I humbly conceive, the loss of their queen."—You are quite right, there is no queen. The only plan that you can adopt, at this season, will be to take a piece of comb from a strong hive that is filled with eggs and brood, and introduce it into your queenless hive, and your bees will at once set about making a queen. In Taylor's box-hive this operation is performed with the greatest convenience.

GERANIUMS AND VERBENAS (B. P. S.).—We do not think that any of the Verbenas would answer well mixed with Geraniums, particularly with the variegated ones. *Mangle's Variegated* will do for a centre-bed

without any mixture. *Tagetes tenuifolia* will soon cover a bed, if planted a foot apart each way; but we allow only six inches; *Lobelia ramosa* the same. Old plants of *Scarlet Geraniums* will answer better than last autumn cuttings for a bed edged with *White Petunias*, because the *Petunia* is likely to make too strong a growth for that of young Geraniums, and unless the bed is well raised in the middle would overtop them.

FLOWER BEDS (Esther Muskett).—All the plants you name are good bedders, and will arrange round the *Heliotrope* and light *Verbena* as a neutral centre. It is best in such cases, when corresponding beds on opposite sides of a centre are filled with plants having the same coloured flowers, and to be of the same height, but not at all necessary that the same plant should be repeated. Nevertheless, your yellow *Calceolaria* opposite a scarlet Geranium, across a neutral centre, cannot possibly mar "the effect," and that is one of the greatest advantages of keeping subdued colours, or neutral tints, in the middle of a composition.

STAGE FOR PINKS, &c. (A Breconshire Subscriber).—A frame, or, as it is technically called, a stage, for carnations should be formed like the skeleton of a house with canvass covers, with a walk down the centre, and a low platform on each side. This platform may contain three or five rows of pots; the former is the most convenient for examining the flowers. Under this shade the carnation flowers, and shows off to great advantage. A frame with glass covers would be too hot and light, and, besides, would require to be at least three feet deep.

PENSTEMON (Wind Flower).—You send a piece of seedling Penstemon, and request us to inform what will be the colour of the flowers. We cannot tell, nor can anybody else. It looks like *Penstemon campanulata*, which has a rosy red flower. The best way to keep *Dahlias dwarf*, or low, is to peg down the shoots with hooked pegs. *Scarlet Geraniums* will flower more freely, and produce less foliage, if they are planted out in their pots.

SOBRALIA (X. X.).—Certainly a species of *Sobralia*, but the flower was so crushed in passing through the post-office, that it was impossible to name it. It is very likely a new species. Have you a piece to spare in exchange, we might then make it out next year?

VARIOUS QUESTIONS (Cantiensis).—*Verbenas*, &c, to be planted in masses should be put in at nine inches apart. The time for planting is as soon as the frosts are over. Your young *Pansies* will bloom in June without any trouble. To get good blooms in September, put in cuttings now; and when they are rooted prick them out, and nip off all the blooms till the first of August. Sow *Verbena seed* immediately, in a gentle hotbed, in a shallow pan. Plant the seedlings out as soon as they are large enough. They will flower in September. Instructions about *Dahlia growing* are briefly mentioned almost every week in THE COTTAGE GARDENER. A more full account of its culture and blooming will appear in due course.

PAYNE'S HIVES (N. D.).—A letter directed "J. H. Payne, Esq., Bury St. Edmunds," will reach him. He is a private gentleman, and will aid you as much as he can to get the hives to Bristol. The common *Long Prickly* and *Sion House* cucumbers are the best varieties for use, and the *Browston Hybrid* for show. For *Dahlia propagating* see page 22.

WINTER SHELTER FOR PLANTS (Pauperis).—The plan you propose will answer very well, but we think you will find it dearer than the "Five-pound Greenhouse." An angle of 34° will do for the roof. Much the cheapest and warmest structure for wintering plants is one with sides a foot thick made of turves, with a door at one end, and a glazed roof at the above angle.

GLASS JAR (Hortus).—You could not expect to obtain this, described by our correspondent, for less than 6s., if new. A square glazed structure would answer nearly as well in every respect but appearance. Our correspondent wishes to know where he can obtain seeds of the *Browston Hybrid Cucumber*?

ANNUAL CREEPERS (J. B.).—The different varieties of *Convolvulus major* are as good as any to plant with standard roses for training against them. *Petunias* we have seen so used; and we have also seen *Tropeolum canariensis*, or the Canary Creeper, so trained, and when it reached the head of the rose it was carried in a festoon to the next standard. Yet the plan is much against the rose-trees, as these climbers exhaust the soil, which can hardly be too good for the rose by itself.

COMBINATION OF GERANIUMS (Constant Reader).—The scarlet breed do not harmonise with the florists' pelargoniums, and neither *Jehu* nor *Prince Albert* are good bedders, but if you must use them with *Tom Thumb* let them be in the centre of the bed, and *Tom* as a belt round them. Your *Vine* will take no harm from the way you stopped the bleeding.

CUPRESSUS MACROCARPA (J. H.).—There is not the slightest doubt about this being the same as *C. Lambertiana*; the officers of the London Horticultural Society who made out their identity are beyond suspicion on such matters. A difference in the fragrance, or some being fragrant and others not, is an accidental variation in seedlings of them, not an unusual circumstance in this and other families. All the plants of *macrocarpa* being fragrant, while those of *Lambertiana* were not so, in a given nursery, is very easily accounted for: they were propagated by cuttings from two or more individuals, the one fragrant and the other not fragrant, but that does not establish a specific difference. We would plant this Cypress 20 feet apart, in an avenue, and in 10 or 14 years remove every other plant; but very likely 60 feet apart would be better for the final distance, still, we would begin with 20 feet.

DISEASED GERANIUMS (C. T. P.).—You have the dreadful malady called the spot among your geraniums, and, if we must tell the truth, there is not a man living who knows, for a certainty, the cause of it. It is infectious, and you cannot now get rid of it till the bloom is over and the plants are cut down to the hard brown wood, and a thin paint of equal quantities of soot and sulphur applied to the remains; but a better plan is to plant them out on a rich border, and take cuttings from the tops of the young healthy shoots at the end of July, and let the frost destroy the old plants. Top-dress the *Fuchsias* and *Geraniums* with the same compost they are in. Potting your *Cactus* now will not prevent its flowering—but why pot till after the bloom is over? If the *Cactus* is

strong, it will do in the same compost as you use for the geraniums; but it is safer to add a fourth-part of old dry lime, mortar, or charcoal, about the size of filberts; but an old brickbat, broken to the same size, will do just as well, if not better.

FUCHSIA (C. I. P.).—These, with the wood alive, but not pushing, will break all the sooner by being plunged in a hotbed; though, if all sound, they will do so without that assistance, if you give them time. We presume they have been kept very dry and cool.

BEGONIA AND VELVETY-LEAVED PLANT JUST PUSHING (Ibid.).—These must not stand in a saucer of water. When more advanced, they will require a fair supply of moisture, but even then we would not treat them as aquatics.

CAMELLIAS (C. E.).—You may cut them back now, but it would have been better done before they broke. You must give them a close and warm position to break freely in, and then there will be plenty of time to set their buds. If you do not prune now, your flowers will be nice and early.

WOODLICE EATING CUCUMBER FEMALE BLOSSOMS (Ibid.).—You must trap, scald, and feed them. First, put a piece of boiled potatoe in small pots, with a little dry hay over it, examine the pots before going to bed, and have some hot water ready to tumble the rascals into; secondly, lay down some dry hay in a corner, or several corners, after you have stirred the bed and sprinkled it with the syringe, at night, or in the morning; have some boiling water in readiness, with a small-rosed pot, and as you move the hay, sprinkle the fellows over with the hot liquid; and, thirdly, while all these measures are in operation, strew the prunings of the cucumber, young lettuces, &c., over the bed, to feed them and keep them from the cucumbers. We have, also, surrounded the plants with a circular double ring of zinc, containing water between the rings. The only thing in the animal way likely to benefit you, are a few hungry, famished toads; and for this purpose, and others, notwithstanding the prejudice against them, they are rare friends to the gardener. You must not easily give up the contest, for your enemy, if left alone, will soon be legions strong.

PLANTING (Cautious, Lancashire).—Do not plant on 54 inches of even hazle loam. Let 24 inches suffice, and let some impervious material form an artificial substratum. For your forcing pit, we should prefer plan No. 2, the general design of which is good, for you will have one capital morning side, and as good an afternoon one on the other, owing to its facing south-east and north-west. We object, however, to your front ventilation, being opposite the pots. We should bring it in below the pot-shelf, immediately over the hot piping, which we should place there, leaving a two-inch cavity between the shelf and the wall. You must mind your levels, and also the relation of the whole to the ground level outside. Let us beg of you to reconsider your piping.

ESCHOLTZIA ALBA (—).—The seedlings require thinning and transplanting the same as the commoner kind.

PEAS (North Nook).—We do not know the varieties named *Hackman's Imperial* and *Black-eyed Susan*.

UNPRUNED VINE (W. J. C.).—You must now let this remain unpruned until the leaves are well expanded, you may then prune it without any fear of its bleeding. In the mean time disbud, train to the rafters of your greenhouse, and stop as you would have done under ordinary circumstances.

BEES (W. A. E.).—The hives may stand so close as to touch each other; but, for the convenience of easy access to each, it is better to have them on single pedestals, and three or four yards apart. We are glad that you found the barley-sugar so good a mode of feeding.

BUDDING ROSES (A. L. G.).—There is no reason against your budding six varieties on one stock; but we cannot select for you without knowing your object, or which class you prefer, or what is the stock to be grafted.

SEEDLING FLORISTS' FLOWERS (S. R. F.).—It is impossible to point out any prophetic rule by which you can foretell which seedlings will produce the best flowers. Do not raise so many, and then you will not be cramped for room.

WHITE FLINTS (J. J.—, London).—Our correspondent requires some for building a grotto: who can supply him? At the nearest station to the chalk on the Brighton or South-western railways you could obtain them for a mere trifle.

FLOWER BEDS (Humble Bee).—We never undertake to plant flower beds for any one; nor until next September will Mr. Beaton offer suggestions again to those who ask advice as to their own proposed arrangements of flowers.

KOHL RUBI SEED (J. B. S.).—You can obtain it of any seedsman who advertises in our columns.

HELIOTROPE-SCENTED CINERARIA.—In answer to a query on this subject, *M. D. P.*, of Bristol, and *Mrs. Charles Stanley*, of Lindfield, Sussex, have such a flower in their possession. *Mrs. Stanley's* is a pure white flower.

LABEL FOR POTS.—R. W. M. wishes to know where the labels mentioned in our No. 128 can be obtained.

FAILURE OF HAMBURGH GRAPES (A. Wallace).—Not only is the setting of the bunches imperfect, but from the specimens sent it is evident that they are much *shanked*—that is, the stalks are ulcerated. As the *Black Prince*, *Frontignac*, and *Sweet-water* varieties, in the same house, are not affected, we feel convinced that there is a deficiency of root action. Examine whether the vine has not rooted deeply, and if so, remove a few inches of the surface soil, and a little mulch put on at night, but removed during sunny days, if the roots are outside the house, would probably be of service.

BURYING BEES.—We find we were wrong in ascribing the report at page 12 to *J. W. Knight, Esq.*, of Weston Favell. Will the party who forwarded us that report oblige us with his name?

TEMPERATURE FOR CUCUMBERS (G. B. O.).—Highest day temperature from 75° to 80°; night temperature from 70° to 65°. Bottom-heat about 70°, not lower. Water should be applied heated to 75°. Give air daily, with proper precautions, to prevent chilling the plants.

ADMITTING AIR TO VINES IN GREENHOUSE (G. S. B.).—We can state from experience, that it is perfectly immaterial whether you admit air by the front lights, or by side ventilators, or by the top sashes. Such fiddling over essentials is the proof of a man not having much practical knowledge. It is essential, to have good-flavoured, well-coloured grapes in a greenhouse, that they should have abundance of air, and it matters not on fine days how it is admitted. *Mr. Crawshaw*, celebrated for his greenhouse grapes, has the glass so fixed that air comes in constantly between the panes.

GREEN FLY AND CATERPILLARS (Bury).—To destroy the green fly on your gooseberry bushes, cover each in succession with a sheet, and fill the tent rapidly with tobacco smoke. Let it remain on for half an hour, and then syringe the bush. The caterpillars are best destroyed by dusting them, by means of a dredging-box, with white hellebore powder. This should be dry and fresh. It is procurable at the druggists.

BEE HIVES (S. S.).—*Mr. Payne* has had both wood and straw hives in use these fifty years, and is not yet able to say in which the bees do best; but straw hives are far the cheapest. As you are only commencing bee-keeping, we would recommend your not driving your bees; all operations should be performed by day, except uniting. Do not let your single stock swarm at all.

IRISH ACRE.—"Permit us to offer, for the guidance of several of your inquiring correspondents, the difference of an English and Irish acre of land. The difference is 3000 square yards, as explained below—

English Square Measure.		Irish Square Measure.	
yds.		yds.	
30½ is	1 pole, or perch	49 is	1 pole or perch
1210 is	40 poles, or 1 rood	1960 is	40 poles, or 1 rood
4840 is	160 poles, or 1 acre	7840 is	160 poles, or 1 acre

Hardy & Son, Maldon, Essex.

N.B. English statute measure is reckoned by Gunter's chain, of 100 links, of which 10 square chains constitute 1 acre."

NAMES OF PLANTS (A Lover of Ferns).—Your specimen came to hand in good condition; and as far as we can judge from its elliptic lanceolate leaves, we should say it is the *Punica granatum*, besides, the respectable establishment you had it from, would not knowingly deceive you. We cannot tell you where you could obtain cuttings of the large and double Pomegranate. (*Juensis*).—1. *Fuchsia cordifolia*. 2. *Mesembryanthemum subulatum*. It is not hardy. 3. *Iberis saxatilis*. 4. Perhaps *Dianthus atrorubens*. Sends us a specimen in bloom.

GERANIUMS (Royalist).—You have been deceived; we do not think either are true to name. But we will say more positively, and answer other queries, next week. Your heath is *Erica persoluta*.

CALENDAR FOR MAY.

PLANT STOVE.

ACHIMENES, repot such as have started into large pans to bloom in masses. **AMARYLLIS AULICA**, pot, to bloom in winter. **APHELANDRA AURANTIACA**, pot, or plunge in bark-bed. **BEGONIAS**, repot, and grow on freely, to flower in autumn and winter. **CLERODENDRUMS**, pot—for the last time—into very large pots, to bloom strongly in July. **CUTTINGS** of all kinds of stove-plants put in under bell-glasses, in heat. **ERYTHRINA CHRISTA-GALLI** repot for the last time, and remove into greenhouse, to flower there during the summer. **GARDENIA FLORIDA** and varieties, and **GARDENIA RADICANS**, done blooming, remove into cold pit; and late crops of them place in greenhouse as they come into bloom. **GARDENIA STANLEYANA**, and others similar, syringe freely, to keep them clear from red spider; repot when necessary. **GESNERAS**, now coming into bloom, tie out; that is, open out the shoots with sticks and ties, to show off the flowers. **GESNERA ZEBRINA**, pot now, to bloom late. **GIVE AIR** freely as the warm weather comes on. **GLOXINIAS**, repot into large pots, to form large specimens; young plants continue to force on to bloom late. **IXORAS**, tie out, and shift into large pots; keep them plunged in bark-pit. **INSECTS**, fumigate, to destroy green fly. **SYRINGE** freely, to keep down red spider. **SPONGE** the leaves of such plants as are subject to this pest. In extreme cases wash the leaves with strong soap-water. **SEEDS**, sow, of all kinds worth growing, in shallow pots, in close heat. **STOVE CLIMBERS** keep well tied in, and within bounds, by pruning freely. **WATER**, apply plentifully, both at the root and on the walls, floors, &c., to keep up a moist atmosphere.

T. APPLEBY.

FLORISTS' FLOWERS.

AURICULAS, done blooming, place upon coal ashes in a cool place behind a north wall. Save seed from best varieties. Prick out seedlings in shallow pans—keeping them under glass. Seed may yet be sown. **CALCEOLARIAS** pot, to flower in July. **CARNATIONS** and **PICOTEES**, place sticks to, shade from hot sun; prick out seedlings. **DAHLIAS**, plant out; placing pots over them at night for fear of frost; place stakes to. **HOLLYHOCKS**, mulch with short littery dung; place stakes to them in good time. **PANSIES** now in flower shade from sun; put in cuttings of, under hand-glasses, in a shady place: layer the long shoots in the same manner as carnations. **PINKS**, place sticks to; put in pipings of. **POLYANTHUSES**, treat exactly the same as auriculas. **RANUNCULUSES**, water freely between the rows in dry weather; stir the surface frequently. **ROSES**, intended for exhibition in pots, shade from sun, water with manure-water. Tie creeping roses frequently, but not too stiffly. Smoke roses frequently with tobacco. **TULIPS** still in flower shade deeply and effectually from sun. Take up early blooming bulbs and dry in the shade. **VERBENAS**, plant out in beds.

T. APPLEBY.

ORCHID HOUSE.

AIR, give, in hot weather. **COMPOST**, materials for, procure this month. **MOISTURE**, in the air, keep up an abundant supply; at the root give

abundance, especially when the bulbs are half grown: PLANTS on blocks syringe every day. RENANTHERA COCCINEA remove out of the stove into the Indian-house to flower. WASH the leaves of all the plants, to destroy insects and open the pores to admit moisture. PLANTS in FLOWER remove into a cool house to prolong the period of bloom.

T. APPELBY.

GREENHOUSE.

Air admit freely in good weather. If the house should be shut up on cold nights, give air the first thing in the morning; toward the end of the month leave a little air all night, increasing the quantity by degrees. ANNUALS, &c., bring in from pits and frames, when approaching the blooming state. Sow quick-growing ones, as Balsams; and hardy ones, as Collinsias and Nemophilas, for succession. CUTTINGS, consisting of nice stubby side shoots of young growth will now root readily in a mild bottom-heat. All bedding-out plants intended for the balcony or a small flower-garden may now be propagated very easily, if inserted in a bed of light soil over a little sweet dung, and a frame placed over them. Young shoots of *Heaths*, *Epacris*, *Azaleas*, &c., may now be struck, inserting them in silver sand, in pots well drained, and putting a bell-glass over them; keeping them rather cool for a few weeks, and then giving them a little mild bottom-heat. EARTH: stir the surface on pots and borders, and fresh dress where repotting or renewing the earth is not advisable. Sow Seeds of the ORANGE or LEMON, and when of a suitable size let them be grafted or inarched—preferring the former—and placing the plants in a moist hot-bed; any stocks raised late last season may be so used. For flowering in a dwarf state, and almost continuously, the Otaheite orange is valuable. SHIFTING into larger pots must be carefully proceeded with. SUCCESSION crops of *Achimenes*, *Gloxinias*, *Gesneras*, &c., must now be seen after. SALVIA must be propagated for autumn and winter blooming. Seeds of *Salvia patens* produce strong nice flowering plants. Their doing well for another season will depend on the treatment they receive now. In consulting present convenience we must not forget the future. HARDY PLANTS should now be set in a sheltered corner, to make way for the importations from the pits and frames. SEEDLINGS and Cuttings must be pricked off in time, or they will destroy each other. WATER will be required oftener as the sun gains strength. Plants with large leaves generally require the greatest supply. R. FISH.

FRUIT FORCING.

APHIDES, keep down by fumigation or tobacco water. BOTTOM-HEAT, beware of extremes, watch frequently, do not exceed 85°. CAPSICUMS, pot off, and get forward, b. CUCUMBERS, increase atmospheric moisture to, in house; remove linings in frames; fumigate if the fly appears, and stop and set frequently. FIGS, water freely; stop a few eyes beyond the fruit. INSECTS in general look for weekly. KIDNEY BEANS, water freely with liquid manure, and stop; pot off a succession, b. Liquid manure use clear and weak, frequently. MUSHROOM-HOUSE, keep a very moist air in; make a late spring bed, mixing loam with the dung, b. MELONS, train, stop, thin out, set, &c., almost daily; water very freely as soon as the fruit are as large as eggs, using liquid manure; continue to plant successions, and sow the latest lot, b. NECTARINES, give peach treatment. PEACHES, stop, disbud, thin their fruit, &c., and syringe freely twice a day. PINES, watch bottom-heat, water more liberally, and keep moist air to. RED SPIDER: sulphur pipes, flues, &c., once a month. TOMATOS, harden off, b. WATERING, increase with the season.

R. ERRINGTON.

ORCHARDING.

APRICOTS, hand pick caterpillars, b.; thin fruit, m. APHIDES, destroy. AMERICAN BLIGHT, watch for. BORDERS, clean and dress. BUDDING TREES (last year), remove wild shoots from, and secure the growing bud. CHERRIES, train and clear from Aphides. CURRANTS (Red and White), stop watery breast shoots, e. CURRANTS (Black), keep down fly, b. DISBUDDING, perform frequently. FIGS, prune, train, and disbud; commence stopping, e. GRAFTS, see the day is safe, b.; keep down wild shoots of last year's, and secure the graft from wind, e. MULCHING, attend well to, e. NECTARINES, as peaches. NUTS, destroy suckers, e. PLUMS, clear from fly, and train, b. PEACHES, disbud, and cleanse from Aphides, b.; stop gross shoots, and thin fruit, e. PEARS, train, and thin fruit, e. PROTECTING, remove from blossoms, m. RED SPIDER, extirpate; depend on sulphur and the syringe. RASPBERRIES, thin out shoots where very thick, and remove unnecessary suckers, m. STOPPING, keep an eye to. STAKING, look to in orchard, b. SCALE on bark, extirpate, b. STRAWBERRIES, mulch and water freely in blossom. Alpines may still be planted, b. TRAINING, attend to assiduously, especially with young trees. WATER, apply in drought to new plantings. WALKS, clean or turn.

R. ERRINGTON.

FLOWER GARDEN.

ANEMONES, water well between the rows. ANNUALS (Tender), remove into another hotbed; pot, if not done in April; water gently, and give air as much as possible; prick out April sown. ANTIRRHINUMS plant and sow for late autumn bloom. AURICULAS done blooming, remove to N.E. aspect, where they will not have the sunshine after nine; offsets with roots detach, and plant three in a pot; seedlings keep in the shade; water moderately in dry weather; auriculas to seed should be kept from wet. AWNINGS, or other shelter, continue over beds of tulips, e. now in bloom. BEDDING-PLANTS be not in too great hurry to plant out; the middle of the month is time to begin any of the half-hardy plants. BIENNIALS, sow, b., in rows, thinly. BULBOUS ROOTS, generally, directly leaves decay, take up and store; seedlings shade through midday; plant again after separating offsets, or else store until the end of July. CARNATIONS, remove side buds from flower-stems; shade from meridian sun; water in dry weather; put sticks to, and tie stalks; sow. DAHLIAS, old, part and plant b.; young, plant out, e. DRESS the borders, &c., frequently. FLOWERING PLANTS require staking, &c. FUCHSIAS, may be planted. GRASS, mow and roll weekly. GRAVEL, roll weekly.

HOEING cannot be too frequent. HYACINTHS, take up and store as leaves decay. MIGNONETTE, sow for succession, b. OENOTHERA MACROCARPA make cuttings of when the young shoots are three inches long. PRUNE LAURESTINUS when done flowering; also BERBERIS AQUIFOLIA. PERENNIALS, sow, b.; propagate by slips and cuttings. POLYANTHUSES, part, and shade throughout the summer; sunshine destroys them; sow seed of. ROSES, watch for insects on, and destroy them; roses in groups keep them low; roses in pots may be planted out. Rose-stocks for budding do not rub off shoot; but stop those not wanted at the second or third joint. STAKE and tie up plants; seedlings thin. TULIPS, remove seed-pods; take up and store as leaves decay; water frequently in dry weather. WALLFLOWERS, sow, to bloom next year. WATER-GLASS bulbs plant in borders as flowers decay. WATERING, attend to in dry weather, especially to plants newly removed. At the commencement of this month, during showery weather, plant cuttings of *Double Wallflowers*, and *Pansies*; and divide the roots of *Neapolitan* and *Russian Violets*, transplanting in preparation for potting to flower in winter. Half-hardy plants may now be brought from the greenhouse and their other winter shelters, and distributed in the borders. Mild moist weather is most suitable for this work. The more tender *Climbing Annuals*, such as *Tropaeolum aduncum* and *Convolvulus major*, should not be planted out until the end of the month. Put in SLIPS of double White and Purple Rocket, under hand-glasses, or near a wall on the north side. CUTTINGS of China Roses plant in a shady place. D. BEATON.

KITCHEN-GARDEN.

ANGELICA, plant, or thin out, as the case may require. ARTICHOKEs, dress off, if not done, and plant a few suckers for succession. ALEXANDERS, attend to thinning, &c. ASPARAGUS, sprinkle with salt once a week during the cutting season. If this be attended to there will be no fear of weeds or slugs; but the surface of the beds should be opened once a week with some little pointed implement. BALM, earthstir among. BEET (Red), thin out, &c. BASIL should be exposed to the open air all fine weather, so as to have good stocky plants to plant out toward the end of the month in warm borders. BEANS, sow in succession in cool situations; attend to topping and earth-stirring advancing crops. BORAGE, sow. BORECOLE, sow, b.; prick out, and save for seed. BROCOLIS of any kind may be sown at the beginning, for *Cape Brocoli* in particular, this is just the season, when sown sooner, they are so apt to run or button; attend to pricking and planting out any early sown kinds, and look to favourite kinds for seed. BURNET, attend to. CABBAGES, sow or plant; earthing attend to. CAPSICUM raised in hotbeds should be well inured to the open air, for planting out in the open warm border, at the end of the month. CARROTS, sow; attend to thinning-out advancing crops. CARDOONS, thin out or sow, b. CAULIFLOWERS, the early hand-glass crops should be well basined up, supplied with water, and liquid manure water, once a week; attend to pricking or planting out in succession. CELERY, may sow; attend to pricking and planting out the earlier sown. CHAMOMILE, earth-stir among. CHERVIL, sow, and leave for seed. CRESS (American), sow; save for seed. CHIVES, keep clear from weeds. CORIANDER, sow, and leave for seed. CROPS FAILED, lose no time to replace. CUCUMBERS, plant out under hand-glasses upon a little bottom-heat; attend to thinning, topping, and removing any decayed leaves daily; those in bearing assist with a little top-dressing often. DILL, attend to. EARTH-STIRRING, in all cases attend to in dry weather. ENDIVE, sow a little towards the end of the month for early use. FENNEL, attend to planting out seedlings. HOTBEDS, attend to. HYSSOP, attend to. KALE (SEA), earth stir, or carefully fork up among the old crowns, if not done before; look over seedlings, and where sown in patches to remain, thin out and attend to. KIDNEY BEANS (Dwarfs) and RUNNERS, sow main crops at the b., or transplant from hot-beds; make another sowing e. of the month for succession; attend to protection in case of frosty nights. LEEKS, thin out early, or transplant; leave for seed. LETTUCES, sow every fortnight; plant out and tie a few every week. MARIGOLDS, sow. MARJORAM (Sweet), see *Basil*. (Common garden), may plant and keep clear from weeds. MELONS, sow b.; pot off and ridge out in succession; attend to setting fruit, thinning, topping, earthing up, and watering the advancing crops. MINT, plant out new beds where required; if short of rooted plants, cuttings will root readily at this season, if planted and well watered. MUSHROOM-BEDS should be made in the coolest situations at this season; attend to those in bearing. MUSTARD and CRESS, sow in succession where required. NASTURTIUMS, sow without delay, if not done before. ONIONS, weed; keep the surface earth loosened: a small fine-toothed iron rake will be found an excellent tool for this and similar purposes; (Welsh) leave for seed. PARSLEY, sow; thin out *Hamburgh*, and leave for seed. PARSNIPS, thin, and earth loosen. PEAS, sow in succession; draw up earth along each side of the rows before sticking, in case soakings of water should be required; sticking attend to in time. PENNYROYAL may be planted in a cool situation. POMPIONS, sow, or plant out under hand-glass, upon a little bottom-heat. POTATOES, hoe amongst, with care not to injure the young fibre. PURSLANE, sow; leave for seed. RADISHES, sow in cool situations; and leave for seed. RAPE, sow for salading; (edible-rooted) sow, e. ROSEMARY and RUE, may plant. SAGE, may plant; cuttings root readily at this season if planted in a shady border and well watered. SALSIFY and SCORZONERA, sow main crop b. SUMMER SAVORY, sow or plant out. SAVOYS, prick out, &c. SPINACH, sow and leave for seed, and thin out young crops. TANSY and TARAGON, may plant. TOMATOS, attend to for planting out e. of the month. TURNIPS, sow, thin out, and leave for seed. TURNIP CABBAGE, sow. VEGETABLE MARROW, sow or ridge out under hand-glasses upon a little bottom heat. Many frosty nights may be expected during May, therefore, previously to planting out tender plants, remember how they are to be protected, should cold or unkind weather set in. T. WEAVER.

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NEW and SPLENDID SEED-LING CALCEOLARIAS. C. TATTERSALL'S Descriptive Priced Catalogue will be sent on the receipt of One Postage Stamp. Padham, near Burnley, Lancashire.

VALUABLE VEGETABLES.

CAULIFLOWERS.—Myatt's Improved Early. Much earlier than the old varieties, more compact, and heavier; considered by the raiser as most desirable; quantity very limited. 1s per packet.

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DUNCAN HAIRS, in offering the above selection from his general list, begs to inform his friends that he warrants them to be as described. 109, St. Martin's Lane, Charing Cross, London.

CHOICE SEEDS, DAHLIA'S, PLANTS, &c.

ASTERS, 4 splendid double varieties, 2s.

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GERMAN STOCKS, imported, 12 sorts, 3s or 6s.

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And all the best Vegetable and Flower Seeds in cultivation. Zinc Labels, improved, 2s per 100, and every thing appertaining to the garden.

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Ditto do. Alba (very scarce), 6d.

PODOLOPIS Chrysanthia, 6d.

PORTULACCA Striata Alba, 6d.

RHODANTHE Manglesii, 6d.

SENECIO Elegans Atrocinerio, new, 6d.

SCHIZANTHUS Retusa Alba, 6d. Retusa, 3d.

Grahamii, 6d.

SAPONARIA Calabrica, 3d.

SILENE Schafeta, 3d.

GERMAN STOCKS, Annual Varieties.—

New Large - Flowered Violet, 10-week, 6d.

Ditto do. Rose do., 6d. Ditto do. Purple do., 6d. Ditto do. Brown do., 6d. Ditto do. Flesh Colour do., 6d. Ditto do. Lilac do., 6d. Ditto do. Blue do., 6d. Wallflower-leaved, finest mixed, 6d. Finest 10-week, mixed, 6d. Double Dwarf 10-week, in 24 separate colours, a packet of each, 4s.

GERMAN STOCKS, Biennial Varieties.—

The following varieties are very gigantic in their habits, and bloom several times in the season.

Emperor, Crimson, 6d. Ditto, Blue, 6d. Ditto, Rose, Purple, 6d. Ditto, White, 6d. Ditto, Lilac, 6d. Ditto, Pink, 6d. Ditto, Carmine, 6d.

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THUNBERGIA Alata, white, 6d. Aurantiaca, orange, 6d.

VERBENA, many choice varieties, mixed, 6d.

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WALLFLOWER, Double Blue, 6d. Ditto Tall Black Brown, 6d.

HOLLYHOCK, fine selected German, mixed, 6d. 18 Prize Varieties, superior double flowers, 3s the collection.

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DIANTHUS Scoticus, 6d.

65 Packets of the best Hardy and Half-Hardy Annuals, 10s. 30 ditto, 5s.

DAHLIAS.—Our list is now ready, contains all varieties worth cultivating, and may be had on application, Gratis. London, 86, Borough. April 2, 1851.

PHLOX Drummondii, beautiful Scarlet, 6d.

Ditto do. Alba (very scarce), 6d.

PODOLOPIS Chrysanthia, 6d.

PORTULACCA Striata Alba, 6d.

RHODANTHE Manglesii, 6d.

SENECIO Elegans Atrocinerio, new, 6d.

SCHIZANTHUS Retusa Alba, 6d. Retusa, 3d.

Grahamii, 6d.

SAPONARIA Calabrica, 3d.

SILENE Schafeta, 3d.

GERMAN STOCKS, Annual Varieties.—

New Large - Flowered Violet, 10-week, 6d.

Ditto do. Rose do., 6d. Ditto do. Purple do., 6d. Ditto do. Brown do., 6d. Ditto do. Flesh Colour do., 6d. Ditto do. Lilac do., 6d. Ditto do. Blue do., 6d. Wallflower-leaved, finest mixed, 6d. Finest 10-week, mixed, 6d. Double Dwarf 10-week, in 24 separate colours, a packet of each, 4s.

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GERMAN STOCKS, Biennial Varieties.—

The following varieties are very gigantic in their habits, and bloom several times in the season.

Emperor, Crimson, 6d. Ditto, Blue, 6d. Ditto, Rose, Purple, 6d. Ditto, White, 6d. Ditto, Lilac, 6d. Ditto, Pink, 6d. Ditto, Carmine, 6d.

TROPEOLUM Tricolorum, 6d.

THUNBERGIA Alata, white, 6d. Aurantiaca, orange, 6d.

VERBENA, many choice varieties, mixed, 6d.

VISCARIA Burridgii, 3d.

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WEEKLY CALENDAR.

M	D	W	D	MAY 1—7, 1851.	WEATHER NEAR LONDON IN 1850.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bef. Sun.	Day of Year
					Barometer.	Thermo.	Wind.	Rain in In.						
1	Th	St. Ph. & St. Jas.	Pr. Arthur B.	30.078—30.048	51—28	N.E.	—	—	35 a. 4	19 a. 7	sets.		2 59	121
2	F	May Bug seen.	[1850.	30.274—30.197	56—23	N.E.	—	—	33	21	8 a. 33	1	3 7	122
3	S	Honeysuckle flowers.		30.271—30.115	61—41	S.E.	—	—	31	23	9 44	2	3 14	123
4	SUN	2 SUNDAY AFTER EASTER.		29.979—29.728	60—32	S.W.	0.08	—	29	24	10 51	3	3 20	124
5	M	Mealy Tree flowers.		29.617—29.583	60—38	N.	0.35	—	27	26	11 52	4	3 26	125
6	Tu	Pheasant lays.		29.581—29.550	45—41	N.E.	0.68	—	25	28	morn.	5	3 31	126
7	W	Swallow builds.		29.497—29.448	48—44	E.	0.10	—	24	29	0 45	6	3 36	127

No one who has not seen the vegetation of a tropical climate, can appreciate justly, either its gorgeous flowers, or its rapid gigantic vegetation; they are the results of uninterrupted high and moist atmospheric temperature, united to an elevated bottom-heat, by which the root action, and the functions of the leaves are sustained in accordant and intense action. The only place we know, in England, where a northern inhabitant of our globe can observe such a climate, and such a vegetation, is in the Palm House in Kew Gardens. We shall never forget the first day when we crossed the Ganges, and stepping from our budgerow, passed under the arched trellis covered with the night-blooming *Cereus*, and entered upon the broad walks of the Botanic Garden at Calcutta. It was in the sultry and oppressive hours of the hottest season, and it was most refreshing to escape to the shade of the *Bunian trees*, in themselves a grove. There are several of these in the garden, but one of them is of gigantic growth; its branches, and their numerous sustaining self-emitted stems, form of themselves a *tope* (grove), covering about an acre of ground. The sight of this magnificent tree gives the stranger a more forcible idea of the vastness and strength of tropical vegetation, than any other object. The trees of milder climes sink into insignificance, when called to memory for the sake of comparison. The natives entertain an opinion that it is sacred, and never struck by lightning—a notion, probably, founded on experience. The fact, if truth it be, is to be accounted for by the resinous, non-conducting quality of its leaves and wood. This, however, is not the only plant deserving attention in this delightful garden, for near it is to be seen the far-famed, and much-fabled *Upas-tree*, the poisonous qualities of which are truly virulent, but not to the extent once believed, when that in Java was the only one known, and that very imperfectly. So far from the very atmosphere around it being rendered pestiferous by the exhalations from its leaves, we have continually plucked them, and handled its stem. Then there is the elegant and brilliant *Amherstia*, with its graceful pale tinted foliage, and long pendulous pink flowers; one of the rarest, and certainly the most beautiful, of trees. No one who has not seen it in blossom, can form even a proximate conception of its surpassing loveliness. Little inferior to this, is the *Poincinnia regia*, and beautiful beyond any of the riches of Europe, are the *Poinsettias*, *Passifloras*, and many others, which we cannot now remember. If the visitor turns to the waters of the garden, he will be scarcely less gratified, by seeing floating on their surface the classic flower of the Eastern Tales, the pink and the white-petaled *lotus*. The fruits cultivated here are also abundant. There is the pumplenose, or shaddock, not unlike a huge orange, with its flesh in granules. The *oranges* which come from China and Sylhet, differ but little from those we have in England, except that they are more luscious, as ripening in a more sugar-creating climate. The *sweet lemon*, globular in form, resembles a green orange, though its flesh is pale, as that of the lemon, and its flavour like that fruit exhausted of acidity by soaking in water, during the process of making lemonade. The *loquat* is now known in England, among those who have conservatories. It is an oval, yellow, smooth-skinned fruit, about two inches in length, and one in breadth; not unlike a small golden pippin, with two or three chestnut-coloured stones. It is a grateful subacid fruit, of the same genus as the medlar, but not requiring to be kept until decayed. The *plantain* is in season throughout the entire year, but in greatest perfection early in March. It is a yellow-coated, long, cylindrical-shaped fruit; flesh butyraceous, and not unlike an over-ripe pear. Lately it has been obtainable in the shops of some of the London fruiterers. The *pine-apple* we consider the most delicious fruit of India; we mean that with the yellow flesh, and known in Calcutta as the *Dacca pine*: the common, white-fleshed, is a very inferior fruit. The *guava* is a yellowish-green-skinned fruit, with pinkish flesh, and a harsh perfumed flavour, very different from that of the jelly to which it gives a name and colour. It is not unlike a small angular apple. The *custard apple* has a pale lurid green rind, divided into raised lozenge-shaped compartments. It is full of brown seeds, about the size of a kidney-bean, each enclosed in a white membranous bag, or follicle, the interstices filled with a sweet gelatinous mass, in flavour much resembling an insipid custard. Of the *mangoes* there are five varieties, of different qualities. The green-skinned *mulwah* is, we think, the best. They are oval-shaped, with a large flat-stone, having numerous fibres adhering. The flesh is of a deep orange colour, very juicy, and if in perfection, resembling in flavour the orange and melon mingled together; but inferior specimens have a disagreeable taste, resembling turpentine. They are about the size of a goose's egg. The *rose-apple* is an oval hollow fruit, the cavity containing a much smaller round stone. Its flesh resembles that of the hip of the rose-tree; but, unlike it, is flavoured, and has a strong smell of attah of roses. The *lichee*, in outward appearance and form, is not unlike a very large mulberry, but its colour is pink, mixed with green; and upon the skin being peeled off, beneath is a very juicy gelatinous flesh, inclosing a large oval seed. In flavour it is sweet, yet with a grateful acidity. The *avigator pear* is a pale green, smooth, oval fruit, not unlike a small bottle-shaped gourd: it contains a large ponderous stone. Its flesh is eaten with pepper and salt, and resembles, in flavour and substance, the yoke of an egg boiled hard. It is called, "midshipman's butter" by mariners. The Botanic Garden, in addition to gathering together these, and a vast assemblage of the rare and beautiful tenants of the vegetable world within its borders, from whence they

have been liberally distributed to all applicants, and to all districts of the globe, has also long been a nursery for the rearing and dissemination of many plants which are now elevating the qualities and varieties of the commercial products of India, and consequently, aiding its increase in wealth and civilization. Experiments are still going on, but hitherto without success, to acclimatize the cochineal insect, and its sustaining plant, the *Cactus opuntia*; but better results have rewarded the efforts of Dr. Wallich, to raise seedlings of the tea, and Arabian coffee-plants, and the Otaheitee sugar-cane. Passing to a rising ground we were gratified by seeing a marble urn inscribed to the memory of Dr. WILLIAM ROXBURGH, the predecessor of Dr. Wallich, in the curatorship of the Gardens. Not far from it Dr. Wallich showed us the spot which he had selected for his own grave, if it was willed that he should die in that land, but we rejoice that it has been otherwise ordained, and we hope that when the hour of his departure arrives, it will find him in a green old age, and as in the case of Dr. Roxburgh, in his native latitude. India is gorgeous, and luxurious—both nature and art render life there splendid; but no virtuous European feels that away from his kindred, he is more than a sojourner—"his heart's in the Highlands," amidst all the Eastern brightness, and most truly has one of Dr. Roxburgh's friends in India written—

"The skies are blue as summer seas—the plains are green and bright—
The groves are fair as Eden's bowers—the streams are liquid light—
The sun-rise bursts upon the scene, like glory on the soul,
And richly round the couch of day the twilight curtains roll.
But oh! though beautiful it be, I yearn to leave the land,—
It glows not with the holier hues that tinge my native strand."

That so Dr. Roxburgh felt, we have reason to know, when he left India for the last time, "to die at home," in the May of 1815. He was a native of Scotland, and proceeded to India in the medical service of the East India Company, at that period when the Scotch interest was predominant, and when, as it was satirically said, if you shouted "MAC," in the Tank Square of Calcutta, a sandy head was thrust out of every window. He soon distinguished himself for his knowledge of the botany of Hindostan, and as he nobly rendered it his ladder of success, *Roxburghia*, one of the evergreen climbers of India has been appropriately dedicated to his memory. In the early part of his career, being stationed at Samuleottah, in 1781, his attention was confined to the plants of the Indian peninsular, and especially to the culture of pepper, but he was not less assiduous in promoting the introduction of plantations of coffee, cinnamon, nutmeg, annatto, bread-fruit, sappan-wood, and mulberry. The tree last named was connected with his efforts to extend the culture of silk, and, as he was indefatigable in promoting the commercial resources of the country, he was not unmindful of the growth of improved varieties of the sugar cane, and he was sustained in his efforts by another disciple of Linnaeus—*John Gerrard Koenig*. Koenig gave the first impulse to scientific botany in India, but less happy than his brother students, he saw his native home no more, dying at Jagrenapore in the June of 1785. Dr. Roxburgh made large collections of plants in the Carnatic, but had the misfortune to lose them, with his books and papers, owing to an inundation at Injeram. Like Newton and like Raffles, who also had to witness the destruction of the harvest of their labours, he rose superior to the trial; and, without giving way to fruitless regret, proceeded with renewed diligence to replace his lost treasures. The East India Company presented to him a botanical library: nor did they stop here in rewarding his merit, but removed him to Calcutta in the autumn of 1793, and appointed him superintendent of the Botanic Garden, which had been established by Colonel Kyd, and whose worth Dr. Roxburgh gratefully commemorated by naming after him the noble and useful trees included in the genus *Kydia*. His superintendence of the garden continued until the year 1814, and during the time few men could have laboured with greater assiduity and success, despite ill health, and despite the unfavourable nature of the clayey soil for gardening purposes. During his temporary absence for the recovery of health, Dr. Carey, the celebrated missionary and Oriental scholar, took charge of the garden, and printed, at the Missionary Press at Serampore, Dr. Roxburgh's *Catalogue of the Plants in the Botanic Garden at Calcutta*. There were then in the garden 3500 described species, of which about half had been named and described by himself. Besides describing the plants, he had them delineated by native artists—more than 2000 of their drawings being forwarded by him to the Court of Directors. Dr. Wallich continued this practice, and we can bear witness to the faithfulness and beauty of the flower portraits. Overcome by the climate, Dr. Roxburgh was at length compelled to return home, and died at Edinburgh in the May of 1815. After his death Sir Joseph Banks undertook the superintendence of the publication of that splendid work known as *Roxburgh's Coromandel Plants*, but which includes some of the labours of Koenig; and, in 1832, Dr. Roxburgh's sons published his *Flora Indica*.

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-four years, the average highest and lowest temperatures of these days are 63.8° and 42.1°, respectively. The greatest heat observed was 81°, on the 6th in 1830. During the time 99 days were fair, and on 69 rain fell.

RESUMING, for the guidance of country visitors to the World's Fair, our list of the public and private horticultural establishments worthy of a visit, we come next to THE ROYAL BOTANIC GARDEN, in the Regent's Park. Here they will see more taste and better gardening than at Chiswick, though as clayey a soil has to be contended against, and a smoky atmosphere. Visitors will also find the same admirable exhibitions of the results of the best gardening of England, as at Chiswick, on May 14th, June 11th, and July 2nd. Exhibitions of *American Plants*, May 31st, and June 7th, and the *Rose Garden* will also be open on June 21st.

CHELSEA BOTANIC GARDEN is also well worthy of a visit; but we have so recently noticed its superior cultivation, that we need only express a hope that, during May, June, and July, the Apothecaries' Company will open it to the public, without the preliminary inconvenience of applying for an admission order. At present, this order is readily obtainable by application to Apothecaries' Hall, Water-lane, Bridge-street, Blackfriars. Steam boats and omnibuses reach Chelsea every five minutes.

Among the nurseries worth visiting, we add the following to those already named—

KNIGHT AND PERRY'S, *King's Road, Chelsea*, is just now quite an exhibition. The showhouses are full of bloom. There are more specimens of *Azalea Indica*, in varieties, than we ever saw together, but of these there are not many in flower. This nursery is famous for *Standards of all kinds*, *Rhododendrons*, *Bays*, *Laurels*, *Laurustinas*, &c. In one house the glass roof is literally lined with the *Stephanotis floribunda*, and as full of flower-buds as it can be. One of the finest collections of the *Coniferae* that can be found near London is very tastefully grouped in fancy beds. The great treat, however, is a new house for *Water-plants*, where the *Victoria Regia* is coming forward rapidly; and the *Nymphaea cerulea* is in full flower, throwing up numerous blooms far larger than we ever saw it before, and it is perfect beauty. *Nymphaea sanguinea* is growing fast. The tank is of slate, three feet from the ground, and exceedingly well made by Mr. Beck, of Isleworth; we did not take the dimensions, but it may be fifty feet square or more, and planted with some of the greatest curiosities among the family of *Aquatics*. The *Hyacinths* in the showhouses were of the most choice varieties, and well bloomed; and there was abundance of all the spring flowering bulbs. The immense *Rhododendrons* (*Arboreum*), which have so long graced the principal apartment in their range of glass, have no bloom this year, and they appear to exhibit signs of having been checked in their growth, but they are certainly the largest in the country. This Nursery is two miles from London. Omnibuses every five minutes from the Bank, and Circus, Piccadilly; and steamers.

J. AND C. LEE, *Hammersmith* (the well-known Nursery formerly Lee and Kennedy's).—The most remarkable feature in this nursery is the fine collection of that singular and curious tribe of plants known as dry stove plants, or *succulents*—*Cereus*, *Echinocacti*, *Epiphyllums*, *Mammillariae*, and others too numerous to mention. Here is also a large number of *Greenhouse plants* in the houses; and a large space of ground devoted to the *Rose* tribe. There is also a considerable collection of *Conifers*, the *Fir* tribe. An hour or two here would be well spent. Two and a half miles from London. Omnibuses pass the gate every five minutes from the Bank.

MESSRS. LODDIGE'S, *Hackney*.—This nursery is renowned for two things: the large *Palm House*, nearly 80 feet high, and filled with fine plants of that tribe; and their extraordinary collection of *Orchids*. For these alone this place must not be passed by; there is also a very extensive collection of *Camellias*, and also *Stove plants*. *Exotic Ferns*

are also choice and plentiful, as well as numerous rare *Heaths*, and other greenhouse shrubs, *hardy trees* and *shrubs*. A visit to this far-famed and long-established Nursery must not be delayed, as the lease is nearly expired, and the principal part will soon, instead of choice plants, be covered with bricks and mortar, in the shape of houses.

H. LOW AND Co., *Clapton*.—This may be truly designated a wholesale nursery. Every thing dealt in is on a large scale. New Holland plants, *Heaths*, *Azaleas*, and other *greenhouse plants* are grown in amazing numbers, and sold while young, chiefly to the trade, both at home and abroad. Here is a tolerable collection of that almost forgotten tribe the *Proteads*, and a large number of *Conifers*. Four miles from London. Omnibuses run from the Flower Pot, in Bishopsgate-street, every quarter of an hour. This nursery is but a short distance from Messrs. Loddige's.

OSBORN AND Co., *Fulham*.—A large establishment chiefly remarkable for a choice collection of *hardy trees*, *shrubs*, and *Fruit-trees*. Four miles from London. Omnibuses from the Bank every quarter of an hour.

ROLLISON AND SONS, *Tooting*.—In this nursery is a large collection of *Orchids* in good condition. Also a fine collection of *Cape Heaths*; and several thousand seedlings of that fine plant the *Rhododendron Javanicum*. Some of the older plants have flowered and proved true, being the orange-coloured variety. Here is also a good collection of *Stove plants*; and a house filled with *Camellias* in good condition. A day may be well spent by visiting Mr. Groom's, Messrs. Fairbairn's, and, lastly, Messrs. Rollison's, for they are on the same line of road. The latter is six miles from London. Omnibuses pass the gate every hour from Gracechurch-street.

SALTER, *Versailles Nursery, William-street, Hammersmith*.—This nursery is but lately established. The owner formerly owned a nursery near Paris. He is famous for new varieties of *Dahlias*, *Heliotropes*, *Phloxes*, *Verbenas*, and other florist's flowers.

WILMOT, *Isleworth*.—This is a fruit-garden famous for *Pines*, *Grapes*, and *Strawberries*. Some idea may be formed of the extent to which the fruit culture is carried on here, when it is mentioned that ten acres are covered with strawberries alone. Eight miles from London, by omnibus from Piccadilly.

WOODRUFF, *Kensall*.—In this nursery may be seen the extent to which the culture of certain classes of plants can be carried in the neighbourhood of London. There are houses, perhaps 50 feet long, filled with one kind of *Geranium* alone; another filled with *Heliotropes*; a third filled with *China Roses*; a fourth with *Verbenas*, and so on. This astonishes those accustomed to see only mixtures of such plants. Two miles from London. Omnibuses pass to Kensall Green every hour from the Bank.

We have confined ourselves to the nurseries within an easy distance from London, for our space would be exceeded were we to enlarge our circle.

GARDENING GOSSIP.

The *Tulip* growers have been taken by surprise by the announcement that Mr. R. Lawrence, of Hampton, whose bed of tulips is, perhaps, the finest in the world, intends to sell them by auction about the last week in May.

The value of this collection may be estimated by the fact, that there are in it no less than 30 Louis XVI., 16 Musidora, 12 Fabius, 12 Pompe Tenebre, 12 Vivid, 10 Nora crena, 10 Thalia, 8 Rose Arlette, 6 Dickson's Duke of Devonshire, 6 Brown's Ulysses, 4 Brown's Magnificent, 4 Brown's Polyphemus, 4 Bysantium, 4 Pandora, 6 Marcellus, 6 Strong's King, 5 Lyde's Queen of Hearts, 2 Lac, besides several each of Groom's Queen Adelaide, Apelles, Brown's Hamlet, Lord Collingwood, Brown's Wallace, Parmegiano, Queen of the North, Salvata Rosa, Dutch Ponceau, in fact every first-rate flower in cultivation. It is quite certain that there has never been such a sale before; and as

the bed has been celebrated for many years as the best in the kingdom, it will distribute more good flowers over the country than has ever been sold in any three seasons. However, the advertisement will contain particulars.

The *Sewage Company* and some of those who have had their pipes laid on, are at loggerheads about the payment for the supply last year. The agreement having been for the *sewage*, and the gardeners having been supplied with *water*, the works not having been completed. One thing is quite certain, the water was of the greatest service to the crops, and it is supposed the misunderstanding will end in a compromise.

The works for the supply of the sewage from one of the principal sewers are nearly complete. The company have been laying out enormous sums of money, and we have always had our doubts whether there could, under any circumstances, be a profitable return. The Fulham gardeners are the only ones at present supplied.

The *King of the Dahlias*, which has been shown, one of the most perfect models in existence, has been let out in dry roots, and we hope it may not lead to that strange mode of forcing which we too well know has ere now totally altered the constitution of a plant; excessive propagation is said to injure a plant; but we draw a very distinct line between excessive propagation and that kind of treatment which destroys the very nature of a plant.

The late Mr. Girling was exceedingly unfortunate in some of his plants of the *Dahlia*; others, who are set down as very bad judges or very bad men, because of the number of bad things sold at high prices, may have been equally unfortunate, and have had plants change their very nature. Making hundreds of plants from one root, if not hurried, may not disturb the quality, but half the number may destroy its constitution, if forced. Suppose the mere number taken from a plant to affect the quality, the first would be good and the last the worst; but we maintain, that although some *Dahlias* would not be affected by forcing, others would be altogether changed. We once visited a *Dahlia* grower when he had just planted all his dry roots of new things in his pit, and the glass was then at 90°. We asked if he was not afraid of so much heat? He said, "No; he should have it higher when their shoots appeared." We observed that it was enough to destroy the constitution of a plant to force it into such rapid growth. However, he knew best; but the most promising flower he had, turned out not worth growing, though it had been shown well the season before. We care nothing about heat to strike the cuttings when off, but we maintain that, to force the growth of the shoots at railroad pace, risks the very constitution of the plant. Watkinson's *Queen of Sheba*, Browne's *Marchioness of Ormond*, Trenfield's *Lady Stopford*, Francis's *Polka*, and Wynnes's *Duke of Cambridge*, were shown the proving season, beautiful models of flowers. Not one of them were worth twopence when they came out. Things do not change without a cause; and we believe nothing more likely to affect a plant than forcing its first growth; for the very first cutting is likely to be as bad as the last. The *King of the Dahlias* will have a chance both ways; but the owner is the one to depend on for a plant that will do service.

The *Dahlia* seems to have fairly struck out a new class for itself, and novelties upon the old fashioned models are useless, however much may be said in their favour. The *Duke of Wellington*, *Fearless*, *Scarlet Gem*, *Yellow Standard*, *Sir Frederick Bathurst*, *Princess Radzville*, the *Marchioness of Cornwallis*, and some two or three others, when not overgrown, may be seen so perfect, as to make all the rest on a stand look poor and coarse; and new ones, to be worth an amateur's notice as show flowers, must be of their character.

Roundness of outline, closeness of the petals, fulness on the face, and symmetry, can alone justify the adoption of a new flower for exhibition purposes; but of sixty or eighty new flowers shown last autumn, there were not half a dozen that could be called an advance on any of the hundreds already cheap and common. Well, therefore, may amateurs call for an honest description of a few of the best to guide them in their choice; well may they hesitate when they want a few, and have fifty or a hundred all recommended as good. We do not wonder at thoughtful men, of limited means, declining to buy the first-rate, because they cannot afford to buy second-rate things at high prizes. Nor are the certificates and prizes obtained by a new variety any guide for their quality. So it is, that unless they consult some authority which they can depend on, they have no certainty in buying the first season.

E. Y.

NEW PLANTS.

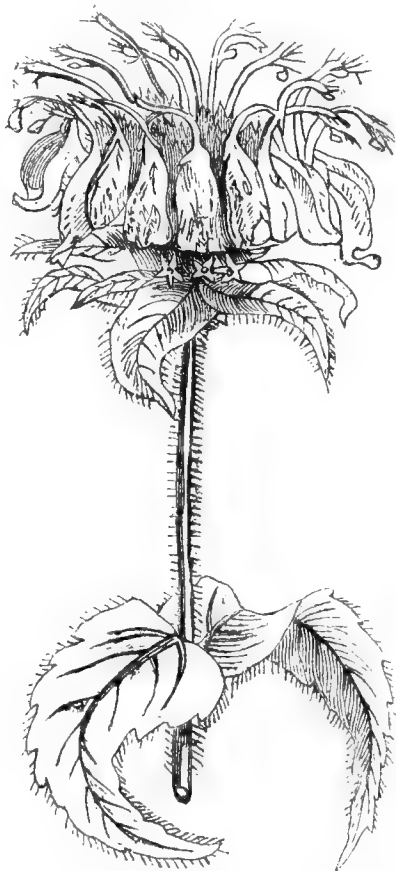
THEIR PORTRAITS AND BIOGRAPHIES.



PLEASING ROGIERA (*Rogiera amœna*). — We have already alluded to this new and very beautiful flowering plant, at page 379 of the present volume, as having been named after M. Rogier, one of the cabinet ministers of King Leopold, by Dr. Planchon, in a Belgian work (*Flore des Serres*, t. 442). We have seen a figure of the plant, with descriptions, in the *Gardeners' Magazine of Botany*, and we have since looked over accounts of other genera and species, which are very nearly related to *Rogiera*, and from the whole we are much disposed to believe that Dr. Planchon has been deceived in this plant, and that it will be found to be only a species of *Hedyotis*, or Indian Madder; so called from the roots of *Hedyotis umbellata* being employed in India for staining nankin. *Hedyotis* heads one of the eleven sections (*Hedyotidæ*) into which the order of *Cinchonads* (*Cinchonaceæ*) is now divided. Linnæus, Decandolle, and Endlicher, with some half dozen more botanists, have been led astray through the difficulty of determining the species belonging to the Indian Madder; hence the genus is loaded already with many synonyms, Endlicher and Rafinesque having each framed three genera from as many of its species, and Wight and Arndt as many more. Even Decandolle raised two of the species to the dignity of generic distinction; and judging from the

descriptions of Dr. Planchon, and from some acquaintance with allied species and genera, we fear he too has added his mite to the load of genera which have given way to Hedyotis. Be that as it may, such things do not detract from the value of a fine garden plant, or one of any kind, although they must be recognised by the biographer or faithful chronicler of family connections. And we do not hesitate to characterise this new plant as a valuable addition to our collections.

It flowers in summer, and being a native of Terra Templada, or the mild regions in Guatemala, will probably do in a warm greenhouse with, perhaps, a little more assistance of warmth from the middle of March until the flower-buds come in view, when the cautious gardener will remove his second plant of it into the greenhouse, to keep it behind the first, which he will keep in the stove until the flowers are ready to open. The flowers are from the ends of the branches, as in the *Ixora*, *Luculia*, and other fine plants, near relations to it, and in large loose heads called cymes, having a great number of flowers in each. The individual flowers are about half an inch across, and near the same in length, and are of a fine rosy colour, deepening into the tube; the leaves are rough, and two or three inches long, hairy on the edges—not a very usual thing in the order—and when the plant is not in flower, it appears like some of the *Eranthemums*. It is, however, not new to our gardens, for Mr. Paxton says it is identical with *Rondeletia thyrsoides*, introduced from Jamaica as long since as 1819.



STEM-EMBRACED MONARDA (*Monarda amplexicaulis*).—*Gardeners' Magazine of Botany*, ii. 229.—The genus *Monarda* was named by Linnæus in his "Genera Plantarum," in honour of *M. Monardes*, a physician of Seville, in the sixteenth century. Like all the plants in the extensive Natural Order of *Lipworts*, the leaves are produced in pairs, opposite each other, on slightly four-angled stalks; and, in this instance, the leaves are what botanists call sessile; that is, without leaf-stalks; so that each leaf is joined to the stem by its base, the two leaves at each joint thus embracing the stem all round. This clasping or embracing of the leaves is called *am-*

plexicaulis. This addition to *Monarda* was lately published in Belgium from a plant long cultivated in the Botanic Garden at Liege, but how, and from what country, it was first obtained is a matter of doubt. At Liege it was raised from seeds sent from the Strasburgh Garden, where it has been called by this name, *amplexicaulis*, said to have been given by M. Fischer, of St. Petersburg. It is said, however, not to be recorded in the works of that author by such a name. Be that as it may, we have no doubt *Monarda amplexicaulis* is a native of North America, whence M. Fischer received many new plants through the officers and agents of the Russian Fur Company.

With the exception of the Lemon-scented *Monarda*, which is a native of Mexico, we believe no *Monarda* has yet been discovered out of North America, where some of them, and particularly *Monarda didyma*, is used as tea, commonly called *Oswego Tea*. *M. fistulosa* is recommended by the North American practitioners as a febrifuge. It may be stated as an interesting fact, that there is no deleterious quality found in the whole order of *Lipworts* (*Lamiaceæ*), to which Mint, Thyme, Lavender, Rosemary, Hyssop, Marjoram, Balm, Basil, and such like aromatics belong. To such of our readers as devote a border, or bed, for gay flowers of a mixed character, *M. amplexicaulis* will be a welcome addition; as it blooms from May to July, and very probably much longer, if the plants are reset every year, after being parted at the roots. It grows two feet high; the flowers are collected together into a round head, on the top of the stalk, like those of the shrubby *Phlomis*; they are white with a rosy tinge, and there are four rows of purple spots on the lip, or under part of the opening. Altogether it is a plant well worth inquiring after, and which no one could pass when in bloom without marking it as conspicuous among a collection of mixtures.—B. J.

THE FRUIT-GARDEN.

MISCELLANEOUS AFFAIRS.—We must, perforce, let our remarks at present assume the character of a memento, for now, above all periods, there is a host of things impending, which, if missed, nay delayed, will much peril the success of the remainder of the year, and, indeed, prejudice the year to come.

PEACHES AND NECTARINES.—We may observe that we never saw anything more perfect than our long wall this spring. This we refer to, in order to inspire confidence in the course of practice we have continually suggested. We yesterday gave the first application for the utter extirpation of the aphides, which have just begun to appear, and one dose appears to have totally destroyed them. In conformity, however, with the practice which has insured success, we shall repeat the dose, and then, if all be well, we shall hear no more of these pests of the peach until the ensuing spring. Three days since we tested the liquid to be applied, and which was composed of tobacco water and soap suds. Six pounds of tobacco paper, and one pound of shag tobacco, produced three gallons of liquor; and we tried one part of this blended with six parts of ordinary soap suds, and found them perfectly efficient. It may be added, that the trees were well syringed with soap suds two hours previous to the application, in order to promote economy in the use of the tobacco liquor, which is rather expensive. It is somewhat singular that we never have even one blistered leaf, about which so many complain, and which is mostly attributed to the east wind. Now this cannot be, for we never feel slighted with regard to these easters; and although, for a fortnight past, we have had a regular "blackthorn winter," as our cockney friends term such starving and drying periods,

still not a blister can be discovered. Now, would it not be more logical to conclude, that the enormous discrepancy between root and branch, which exists at this period, is a fertile, and, perhaps, only cause of such mischief? Let us fancy a case of a south wall of peach trees heated occasionally to 80° or 90° by sun-heat, whilst the roots, in a border of some four or five feet in depth, in a sour soil, would not enjoy a temperature higher than 45°. This is not an uncommon state of affairs; and if the border over their roots be subject to the annual trespasses of the spade, there is not, perhaps, a fibre nearer than eight inches from the surface. On the contrary, our trees have their fibres, like network, close to the surface; no spade ever enters; their soil, moreover, is only fifteen inches deep—a sound loam. This undug soil is now covered with a kind of network of small cracks—minute, indeed, but numerous—and indicating, at a glimpse, a ready sympathy with the increased atmospheric temperature. All this is the reverse of what gardeners term sourness; and it may be affirmed, that root and branch are in a fair position for a constant reciprocation. The setting of the blossom, which was unusually fine this year, appears to have been most complete; and the little peaches are now, April 16th, just beginning to show their noses in the centre of the calyx.

DISBUDDING.—At p. 33, the disbudding of the peach was adverted to; we now turn to some other fruits.

THE APRICOT.—There is seldom occasion for much disbudding with this fruit, at least, if the trees are in proper order, for most of their lateral produce will then be in a position to pass into the character of blossom spurs, with a little management. If any gross shoots appear in a position where sufficient shoots of ordinary strength exist, they may have their points pinched off the moment they are a couple of eyes in length; or, if in a crowded part, stripped away at once. Gross leading shoots on young trees should be carefully watched, and pinched betimes, but not all at once. Thus, suppose a tree of some three or four years standing possesses four or five leading shoots, which, although differing from each other in degrees of grossness, are yet too strong to be fruitful in themselves, we would pinch the points of the two which extend the furthest, when they are four inches in length; then wait a fortnight and pinch another or two, and so on with the rest; this practice will have a tendency to bring the trees into equal shape, and also to equalise the sap; which latter proceeding is carried out with facility during the period of rapid growth; whilst, in the rest season, it can scarcely be effected by the most careful pruning. By this timely stopping, two very important points are accomplished. The check given to the keen impetus existing in the grosser shoots, is just so much power added to the inferior portions of the tree; the spurs on which, especially at the lower portions of the wall, are apt to become lean through the monopolising character of the gross leaders, which, as shown in p. 33, plainly evince a tendency on the part of the tree to assume its native character of a standard, a state totally incompatible with the object sought in this country. Moreover, many apricots, as the Moorpark, bear tolerably well on the young shoots; but these, to possess such a prospect, must be of early growth, and of a moderate degree of strength. This then, is a reason for stopping the gross leaders betimes, in order that a chance may exist of the branches proceeding from them becoming fruitful.

Something more, however, must be done; much of the breast wood amongst the natural spur will be disposed to ramble, and thereby choke the spurs. The apricot dresser, therefore, should look over these carefully; and all which are of moderate growth, and for which there can be found room, should be left to tie down, and the remainder, if extending too far, be imme-

diately pinched. All these proceedings should be well attended to at the end of April, and beginning of May; for, as we have before observed, the apricot needs all the sunlight and warmth a British summer can afford, and will enjoy a warm chimney at its back into the bargain.

Above all let the caterpillar, the produce of the Red-bar moth, the *Pædisca augustiorana*, be hunted out, and extirpated. There can be little doubt but that the devastation committed by these devouring caterpillars, is one of the chief causes of the unfruitfulness of the apricot in some situations. These rogues not only devour, but they curl up the leaves in such fascicles, as to much impede the elaboratory powers, on which, it is scarcely necessary to urge, the fructiferous principle depends. We know of no better way than hand-picking as soon as they can be discovered.

FIGS.—The winter protection is, of course, removed long before now, and if the trees are not pruned and trained, it must be done immediately. These things are always best performed when the bud of the fig is considerably advanced, for then may both the bearing wood of the present season, and that most eligible to be retained for future bearing, be readily distinguished. The wood of the fig must be kept very thin; as a general principle, the old shoots may be laid down at about nine inches apart. We think that it would be found better practice still, to place them at a foot or fourteen inches, and then to tie down short-jointed shoots all the way up the old stems. We here confess to a bias towards this practice for all tender fruits, not excepting the vine; for we hold it a fundamental principle not to shade the whole of the wall with foliage, but to make use of alternate portions as a reservoir of heat, and this we could never so well carry out on any other plan. We, therefore, practice it with nearly all, excepting such as the Morello cherry; and tie down shoots reversed on any portion of the old trunk, sooner than allow a naked portion, being anxious to make every inch of our trees assist in paying a rental. Trees thus treated will be found clothed with buds to the very stump, of which we have very many instances. To return to the Fig; a very liberal disbudding must be practised; no tree produces more useless spray than the fig when in a growing state. However, if growing too freely, we advise root pruning forthwith. This must be done cautiously at this period, for fear of casting the young fruit; and it will suffice in most cases to open a trench at or near the extremities of the root, and to leave it open for a few weeks, making two or three inroads during that period on the roots.

STRAWBERRIES.—Let us advise those who have not done so to mulch immediately. Ours have been done a fortnight, and the mulching is chiefly tree leaves and old litter mixed, in a half rotten state; this we have placed two inches in thickness. When the blossom truss is on the eve of expanding, we shall, unless the weather is rainy, give one unusually heavy watering, and another similar application, if needed, in about ten or twelve days; this, with the mulching, generally suffices. When the first watering is completed, we place clean, new straw, drawn and placed in straight bundles, beneath the trusses, and running nearly close to the collar of the plants. We are obliged, however, to begin trapping for the mice immediately; they are sure to be attracted if it be wheat straw, especially if badly threshed. It is probable rye straw would be much better, but we cannot obtain it. An early opportunity should be taken to destroy all useless runners, which impoverish both the parent plant and the soil, and should be well kept under.

VINES.—Out-of-door vines will shortly be budding fast, and the finger and thumb must be put in requisition, for they are sure to produce a host of barren and useless or ill placed shoots, which are best nipped away the

moment they appear. The injury we have stated to arise from a sudden disbudding of the peach, does not apply to the vine, which would seem to show that the reciprocity between the root and the leaves is much later in action with the vine, which it appears unfolds and partially develops its shoots on the strength of its former resources. Stopping, too, will have to be practised towards the end of May; and where shoots, by farther extension, would become crowded, their heads many be taken off a joint or two beyond the fruit; and where naked spaces are to be covered, of course they may ramble until they have nearly covered the allotted space, and then be immediately topped.

R. ERRINGTON.

THE FLOWER-GARDEN.

DAHLIAS.—Any process or expedient by which we can economize time, space, and pots, at this, perhaps, the most critical time of the whole year for the flower-garden, is assuredly worth fighting for. In the "Companion to the Calendar" for April, I remarked that dahlias might be planted out any time that month as safely as potatoes, and our whole stock of them here, amounting to some hundreds, were in the borders by the middle of the month, after being started in heat, but never potted,—and this is how we went to work: Early in March all the dry roots were planted in pure sand, over a very slightly-heated bed, as close as they could be placed. Those roots of which we had more than we wanted were thus treated, as well the most scarce kinds. The temperature of the bed was about 70° all the time. Very shortly, the eyes of some began to sprout, for they were hardly covered with sand; and as soon as four or five eyes had pushed two inches, the root was pulled out of the sand, and reset in a similar bed of sand, in a cool pit, where no artificial heat was applied; this sudden check put a stop to the first stimulus by heat, but still a low rate of growth was going on, and time was gained over the system of planting at first in a cool place, or at once in the open ground, and we all know that Dahlias can never come too soon, where only a display of flowers is the object. After the first remove, the bed was watched, and as soon as two inches of growth appeared in any of the roots, their removal took place instantly; and very early in April, the bulk of the stock went through the process of starting, and were then in a cool place. By the middle of the month, the whole were considered to have recovered from the check by removal, as, by that time, "they were pricking up their ears generally," as the propagator observed, and that was the index to the right time of planting them out permanently. No matter how long rain continues, our soil is fit to work on after two fine dry days in the spring; and, notwithstanding that we have had five weeks of rain this spring, we could, and did plant out all our dahlias a few days after the rains were over. They were planted by the book, the stakes being first all placed where the roots were to be. No. 1 comes in the first row, being the most dwarf of all the race, and so free a bloomer, that we are tempted to use it as every second plant along the whole row, which holds about a hundred plants, fifty of which are *Zelanicas*, the name of this same old dahlia, which is as dark as *Admiral Stopford*, and as ragged as a colt, but still the best dwarf dahlia in England for the flower gardener, because it will associate with any of the colours or shades of colours—make rows or beds by itself, or come in between two colours that would not otherwise agree, just as a white flower comes handy to get one out of a fix at bedding-out time. The dwarf fancy dahlias are not grown in beds half so much as they deserve to be; they answer that way far better than the tall kinds trained down, as some people manage them. They are,

also, as well suited for growing, or rather for keeping in pots, to come in for "second planting," as any of the old tall ones. Although it is an easy way to plant out now, or sow such things as keep on flowering for the whole season, that is not the best way to make the most of a large flower-garden. Where circumstances will allow of it, I would prefer planting a certain number of the beds twice during the summer, for the sake of change, and also because one could use many showy things which cannot be seen where "once-planting-and-done-with" is the fashion.

HOLLYHOCKS are over by the beginning of September, on the average of seasons; and when the stalks are cut down, how is a bed of them to look for the rest of the season? A mere wreck, at the best; and very likely that is the reason why they are not grown in beds generally. There is nothing in the way of flowers—at any rate, in the flower-garden—more noble and handsome than a large bed of well-selected Hollyhocks in full bloom, and no bed can be too rich for them, neither can they ever have too much liquid-manure, if it is not too strong. As soon as they get past their best, they should be cut down, and the bed ought to be immediately replanted with a set of dahlias, kept in pots, and plunged in the reserve ground on purpose; that is just the way we manage two large beds of them here, and they are as much admired as any thing we grow. I would strongly advise a few dozens, or scores, or hundreds, as the case may require, of Dahlias to be kept in pots, ready to come in for second planting by the end of July, when many of the summer flowers are done with.

It is little to the purpose to say there is no time, or pots, or space, for this preparation of Dahlias just now. I am as much pinched in these essentials, at present, as any gardener in England can be, and the way I got over this job the other day, will be a good hint for many; at least, I hope so. One of the men planted out about four hundred Dahlias one afternoon, on purpose for potting. They were planted in "the American beds," along the outsides, and there they will grow at their leisure until our hurry is over, and the garden is planted before the end of May, and when we shall have more empty pots on hand than we know what to do with. Then, on some damp or dripping afternoon, these Dahlias will be taken up, potted, and then plunged in beds out of sight, there to remain ready for use.

SALVIA PATENS may be treated in all respects as these dahlias, that is, the plants may be put out any time in April, when the beds are ready for them, either after being first started a little in heat, or just as they come out from their winter quarters; but, like Dahlias, they come earlier into bloom if they have a little indulgence in March; and a lot of them may be planted out now anywhere, to be ready for potting by the end of May, or whenever you see that they have sucked up food enough to cause them to grow in earnest. This is a much better plan for them than potting them in the first instance, to say nothing of the difficulty of finding room for the pots, till the season is warm enough for them to stand out without getting pinched.

CHINA ASTERS, **STOCKS**, and **DOUBLE INDIAN PINKS** furnish almost an endless number of varieties for autumn flower beds, to come in after *Cloves* and *Carnations*, all of which I would bundle out of the flower-garden as soon as they are past their prime. At that time they may be as safely transplanted as cabbages, and yet half the world are contented to let them remain till the hares and rabbits nibble them off in the winter. If there was any danger in removing them when they were going out of flower, or if pots, frames, or glasses, were required to get up a crop to succeed them, and carry on the bloom to October, there might be some show of reason in keeping blank beds; but nothing of the sort is needed. The first week in May is just the right time

to sow the China asters and Indian pinks in an open border, to come in for this very purpose, and about the fifteenth or twentieth of May, the right time to sow some *Ten-week* or *German Stocks*, as they now call them, for succeeding Cloves and Carnations, *Clarkias*, *Eucaridiums*, *Leptosiphons*, *Sphenogynes*, and I know not how many more most beautiful things, which a false taste, not to call it by a more harsh name, has consigned to neglect. I must qualify all this, however, by saying that this kind of succession of beautiful flower-beds requires far more labour, or more expence, which are one and the same thing, that the plant-a-bed-and-have-done-with-it-for-the-season system. Sowing, weeding, pricking out, watering, shading, stirring the surface soil between rows of tiny seedlings, pulling up decaying annuals, trenching the bed, adding fresh soil to it, perhaps, watering it before and after planting in the dog-days, and also morning and evening for the next ten days or more; all this, and more work besides, which I cannot now bring to mind, is not done by the fairies now-a-days; but those who can do it by hard cash, and do not attempt it, have no idea what a source of enjoyment they forego.

WHITE SALVIA PATENS.—Now that a good stock of this new *Salvia* can be had easily, I would propose a bed to be planted with it and the blue one, in equal numbers; but the bed must not form one of a regular arrangement. Blue and white always look well together; and when the height and style of growth of the two plants agree, as in this instance, the effect is much heightened. It is true that this blue is not of the best tint to stand against a white. It is two shades lighter than the best blue for that effect; but, on the other hand, the white *Salvia* is not a very clear white, and therefore may suit better; but of this no one can judge properly without seeing the two as I propose.

Speaking of mixed colours reminds me that I have said nothing this spring about the *white* and *purple Clarkias* mixed; but I confess that I do not believe there are two other varieties of plants on the face of the earth, which put in, or sown, together, will give so striking an effect; and in a single long row they look better than in a bed. I have seen ladies, of great taste and talent in the disposition of colours and plants, stand, as it were, rivetted to the spot, admiring this row of *Clarkias*, which we never miss here, always in the same place, and about a hundred yards long. It is the second row of annuals on the dahlia bank, which forms for that space one side of a level green, or grass terrace. The first row is of the two varieties of *Eschscholtzia* mixed, next the grass; then a row of the *dwarfest Dahlias*; after that these *Clarkias*; then the second row of *Dahlias*; the third row of annuals being a mixture of ten varieties of the late *branching Larkspur*; and the fourth row of Annuals. I have been striving for years to get one of the real old blue branching larkspur, but that I cannot procure here, or on the Continent, perfectly genuine, for love or money. Some of our kind readers sent me seeds last year, but they were of the perennial kinds. *Clarkias* sown next week will be in bloom by the 20th of July, and last till the end of August.

D. BEATON.

GREENHOUSE AND WINDOW GARDENING.

A FEW GENERALITIES AS RESPECTS WINDOW AND BALCONY PLANTS.—From the enquiries that reach us, we are frequently reminded that in gardening, as well as other matters, there is a possibility of “starving in the midst of plenty.” Information may be copiously diffused, but it can only be used effectually when inquirers gain the habit of generalising for themselves. Not-

withstanding the attempts to simplify, many cannot help feeling that there is something like a mystery unexplained connected with the treatment of some of *their* favourite plants. “Such and such rules” say they, “may do very well for those who have regular green-houses, &c.; but how are they to apply to us who have nothing but our windows and little balconies? True, we might keep them easily and cheaply supplied by purchasing them in bloom from the nurseryman; but then, even if they looked better, we should not derive half the pleasure to be realised by obtaining the plants when young, and tending them through all their stages with our own hands.” When treating of things about which we are familiar, we are too apt to forget that what appears to us simple was once dark and abstruse; that, in fact, simplicity and complicity are relative terms; everything appearing simple after it is thoroughly understood, but not before. A lady who has read this work, and praises it highly, and who is quite an enthusiast in her love for flowers, and does her outside gardening extremely well, lately had hyacinths in glasses over the fire-place in the sitting parlour, their long lanky leaves being destitute of strength to keep themselves anything like upright; while on the top of the dwarf cupboard recesses, so common by the sides of the fire-place in such snuggeries, were neatly arranged *Geraniums* and *Cinerarias*, the latter in bloom, and striving magnanimously, notwithstanding their position, to look gay and healthy. The owner of such beauties had heard and read much of the value of light, but then she imagined her poor plants had received plenty of it, as the light streamed into every part of the room as soon as the shutters and blinds were withdrawn from the window. The difference between direct and diffused light never suggested itself to her consideration. She found that plants in full bloom kept in full flower in such a position much longer than when placed in the window sill, and the conclusion is arrived at, that what preserves the bloom, will also preserve the plant, and minister to its health and luxuriance. Now, though shade and diffused light are the best circumstances for securing the long keeping of flowers, though the colour may be somewhat paler, they are, also, the very circumstances most inimical to that firm and sturdy growth which is the best preparation for abundance of future bloom. Plants necessarily differ in their aptitudes for bearing strong sunlight; but even those which we frequently shade in summer would dispense with that kindness if they were more hardily reared and treated. It is the desire to see them *grow* in dull weather as well as in bright, the keeping them close and warm under glass, or inside our windows for that purpose, the expanding and attenuating, rather than the adding to and strengthening, of the tissues which thus take place, that render the plants flaccid and drooping before the first bright sunlight to which they are exposed. As a general principle, little is added to the carbon or solid substance of a plant, except what it assimilates in sunshine. Our room plants, therefore, can only be preserved in robust health in winter, early spring, and late in the autumn, by being kept as near the glass as possible during the day, and presenting no obstruction whatever to the light. No rules, at least few of them, are without exceptions. These exceptions, if few, instead of nullifying, only confirm the rule. Thus plants, in general circumstances, under glass, like as much light as possible, is one rule. Another is, *they dislike sudden changes of any kind*. Hence the carrying out of one of these will often seem an exception to the general validity of the other. For instance, here in this gentle month of April we have a few days of bright sunshine, followed, as is often the case, with eight days of cold, sunless weather. Observe the plants out-of-doors, there is no stimulus, and, therefore, they stand still. The expanding and assimilating,

the absorbing and evaporating processes are all at a minimum, and, therefore, when the sun *does* break through and shines for a whole clear day, it does not find a debilitated drawn plant, with thin watery juices, on which to act; and, hence, every leaf stands out erect to salute his beams, instead of drooping, as nursed, coddled things, from weakness and paralysis. Did we, in our hothouses, greenhouses, and inside our windows, take a lesson from nature, we should give ourselves less trouble, and obtain better success on the whole. But how few amateurs have the courage to do it, even when convinced of its propriety. When the sun shone in the beginning of the month, everything looked so cheerful, that the window was opened a little to give the plants and the room a breath of fresh air; but during the dark, rather dismal eight days, such a thing could not be thought of, while the fire in the grate burned brisker than ever, and very likely the temperature of the room was higher than even in the bright sunny day, when an increase of temperature would have been attended with no danger. But the bright, sunny weather suddenly comes. Previously, from the heat of the room, evaporation of juices had been taking place through the leaves and stems, supplied with fresh watering at the roots, and damping the foliage; but the absence of sunlight had caused a very slow assimilation of solid matter. When the sun shines powerfully, therefore, after these dull days, upon the plants, the processes of evaporation, and the assimilation of solid matter by the decomposition of carbonic acid, are effected with too much celerity. Plants with thick leaves and succulent stems will stand the change pretty well, but plants rather tender, with thin leaves, run the risk of drooping, and having their foliage scorched at the points. Here we find that there may be too much of such a good thing as light. The rule of *the danger of sudden changes* comes in as an exception, to neutralise any injurious tendency even in these circumstances; and, hence, we damp the foliage to lessen the evaporation from the interior of the plants, and we shade with muslin, or tissue paper, to break the force of the sun's rays, until the plants get used to them. Hence, also, the reason why a close atmosphere and shade for a time are so beneficial for all potted plants, before the balance of reciprocal action between branches and roots are restored. In artificial gardening, either against walls or under glass, it is of quite as much importance to avoid exciting changes, by shading from light, as it is to secure from frost. The shading, however, should continue no longer than necessary, and it will be the less needed, the more our treatment inside is regulated by the weather outside. In such circumstances as we have referred to, the plants must have full unobstructed light by degrees. We must treat them as a wise physician would diet a famished man. He would not at once stuff him out with the richest and most concentrated food; that he knows would be quite as dangerous as the not having enough, nay, more so, as the effects would sooner show themselves.

But if these remarks hold true, in the case of plants in a window in spring, inside of a room, where the heat is regulated, not by the wants of the plants, not by the temperature without, nor the absence or presence of sunshine, but by the sensations of heat and cold of those who cluster around the blazing ingle; how much worse must be the position of those I first referred to, grouped in the side-board recesses, and standing on the mantel-shelf. The sun, it is true, may shine *into* the room, but all they can ever obtain of it, will be a *tantalising* feast; small will be the gleam that ever plays on their blanched forms. Need we wonder, at times, that young beginners are disappointed, and that something like complaints reach us, though professions are strong that practice was according to rule. Why, the rule which would apply to sturdy plants in a window, grown near the glass, obtaining

the direct rays of light, with the loss of those merely intercepted by the glass, with air given on all suitable occasions, and their comforts and necessities not forgotten, while their owners attended to their own, could never apply to such attenuated and exhausted things as were clustered around the chimney corner. The best way to manage them, unless the possessor has a good stock of patience and perseverance, would be to consign them to the rubbish heaps. To recruit these, as well as those coddled in a close heated twilight atmosphere in a window, they must be inured to *light and air very gradually*. For instance, there is hardly a person who has flowered a *hyacinth* for the first time on a chimney mantel-piece, but who would like to preserve the bulb that had ministered such an amount of pleasure. Well, then, the first thing to be done, is to take it to the window, and inure its leaves there to stand the full light, remembering that without the perfecting of these leaves in light, you will look in vain for flowers from your bulb. This transition state passed, you may move it out of doors to a sheltered border, and there plant it in a new light soil, burying the bulb, so that it will be from two to four inches below the surface; and here, in addition to watering, if the soil is at all dry, you will require again to shelter with an evergreen branch, partly to break the wind, and partly to blunt the force of the sun's rays. By and by the branch may be removed, and when the leaves turn yellow, your care as to *growing* for that season is at an end. If not too far exhausted, before planting out, (for all the time it stood on the chimney piece, it was feeding and living chiefly on itself,) it will bloom the next season in the border. If much exhausted, it will require another season, if it does not die altogether, though that is not often the case. To get the bulbs to flower well in pots or glasses the following season, after doing duty in this—the keeping the leaves green and healthy after flowering, must be as carefully attended to, as if it were a flower stem you were tending. To effect this, and enable the bulb to have a sufficient rest, the plant should be kept inside the window full in the sun, or placed in a pit or frame, for a similar purpose. Indeed, such a receptacle, however small, is indispensable for a fine appearance of plants in windows, as plants may be kept in such a place before they come to their best, and again, when perfecting the wood is necessary, after the flower has passed. But whether possessed of such a receptacle or not, the advantage of light, and also of shade, must be duly attended to in the case of all those plants preserved during the winter, and now to be shifted, planted, and for future display in window, balcony, or garden. The same rules apply to all young seedlings, and several of which it is now advisable to obtain by sowing, for the outside of the window, and for covering the outside of the verandah, such as *Nasturtiums*, *Tropeolum Canariense*, and *Convolvulus-major*, &c.; all of which, either sown where they are to remain, or to be pricked out afterwards, will thrive better than if sown inside a month ago.

R. FISH.

HOTHOUSE DEPARTMENT. EXOTIC ORCHIDACEÆ.

(Continued from page 37.)

Lissochilus parviflorus (Small-flowered L.); South Africa.—Sepals and petals dull white, beautifully striped with pale rose. A pretty freely flowering species. 42s.

L. speciosus (Showy L.); Sierra Leone.—The flowers are large, and bright yellow, with a few streaks of pink on the lip. They are produced from the side of the large pseudo-bulbs, on stems frequently three feet high, and are very ornamental. 31s. 6d.

L. roseus (Rose-coloured L.); Sierra Leone.—The

sepals are of a rich brown, and in texture like velvet; the petals bright rose; the lip is of the same colour, with a blotch of yellow in the centre. A very charming species, but extremely rare.

Culture.—This is a genus of terrestrial orchids, found growing in open glades, in the hottest part of Africa, requiring, therefore, the warmest part of the orchid-house.

Soil.—Strong loam three parts; rough fibrous peat one part; leafy mould, not much decayed, one part; with a due quantity of sand, will form a compost suitable to them. Pot them in the spring of the year; let the bulbs be slightly covered, placing the old bulb near to the edge of the pot with the growing bud in the centre of the pot. The reason for this, is to cause the shoots to be centrally placed, and to allow the young bulbs plenty of room in which to swell. If the old bulbs were placed in the centre of the pot, the young ones, when grown, would be thrust against the side, and be cramped and deformed. Give a little water at the time of potting, to settle the earth, and then water but seldom, till the young shoots and leaves have made considerable progress. After that increase the quantity of water considerably, and every third time add a small quantity of liquid manure to the water. Always use the water of the same temperature as the air of the house.

During the season of growth, let the air be well supplied with moisture, and keep up a temperature of 70° to 80° by day, and 65° by night. In winter, reduce the water at the root, the moisture in the air, and the heat to 60° by day, and 55° by night. These two modes of treatment will give a season of growth during the longest days, and a season of rest during the shortest.

LYCASTE AROMATICA (Sweet-scented L.); Mexico.—The flowers spring numerously from and round the base of the pseudo-bulbs, sometimes as many as seven or eight from one bulb, each flower being separate. They are of bright orange colour, and are very fragrant; a nice plant for a small collection. 15s.

L. CRUENTA (Blood-coloured L.); Guatemala.—Sepals and petals very deep orange, lip same colour, with a blood-coloured spot at its base. The flowers are produced in the same mode as those of *L. aromatica*, but are larger, of a finer colour, and their beauty is generally enhanced by the rich coloured stain at the base of the lip. A really fine species which ought to be in every collection. 31s. 6d.

L. HARRISONII (Mrs. Harrison's L.).—Sepals and petals cream or buff-coloured; the lip is of a clear purple, spotted and streaked with cream. This is a very handsome, large-flowered species. The flowers generally come in pairs, but sometimes, when very strong, three will be produced. A large plant, when in bloom, is very attractive. Though old, and comparatively common, yet it is worth having, as it is very hardy; that is, it is not easily killed by mismanagement. 10s. 6d.

L. PLANA (Level-flowered L.); South America. The flowers are of a greenish cast; the lip is fringed. Though not of a showy character, this species is worth growing on account of its large flowers, which are produced on long stems, rising even with the foliage, and are then very conspicuous. 42s.

L. SKINNERI (Mr. Skinner's L.); Guatemala. Sepals pure white, tinged at the base with crimson; petals rosy white; the lip is of a white ground colour, with numerous spots of the richest carmine, almost over-clouded. There are several varieties with the lip of brighter and darker shades; but even the worst coloured variety is a splendid flower. Each flower often measures five inches across. It has also a slight but delicate perfume. Altogether this is one of the finest orchids, pretty easy to grow, and lasting a long time in bloom. 31s. 6d. There

are two or three more species of *Lycaste*, but they are scarcely worth growing.

Culture—Soil.—Rough lumps of peat, mixed with chopped sphagnum, and small pieces of charcoal, will form a compost suitable for these charming plants. In potting, they should be placed upon a little hillock, in the centre of the pots. Plenty of drainage must be given, as they are impatient of water lodging about their roots, especially when young or fresh growing. They, like all other orchids, require a season of growth and a season of rest. During the former, they must have a free supply of water at the root, and a due amount of moisture in the air. Being chiefly natives of Guatemala, they do not require such a high temperature as plants from India; 65° to 70° by day, and 60° by night, in the growing season, and 55° to 60° by day in the season of rest, is an abundant heat for them. When at rest, but little water must be given, and a much drier atmosphere allowed. We have often written of the desirableness, or, rather, we may say, of the absolute necessity of rest, and complete cessation of growth for orchids. Without this cessation of progression the powers of the plants to produce strong growths and abundance of bloom become prostrated. They make growth, it is true, but do not secrete those juices which enable them to produce flowers. In that respect they are very similar to real bulbs. If these are forced into growth at unnatural seasons, or by excessive heat and moisture are compelled to continue growing for a longer period than is necessary to perfect their annual growth, the bulbs become smaller and smaller, and eventually perish. The rest of plants is something analogous to the sleep of animals, and we all know the great injury our health sustains if, for any lengthened time, we are deprived of our regular succession of repose.

MAXILLARIA.—This is a large genus, mostly with small flowers that are of dull colours, from which we shall cull only such as are worthy of cultivation. We may mention in this place, that several of the finest plants known as belonging to it, have been very judiciously separated from it by Dr. Lindley. The following genera have been either greatly added to, or entirely formed from, plants that formerly were all classed as *Maxillarias*: *Bifrenaria*, *Colax*, *Lycaste*, *Paphinia*, *Promenæa*, *Scuticaria*, and *Warrea*.

MAXILLARIA MACLEEI (Mr. McKlee's M.); Guatemala.—Sepals and petals brownish red; lip ground colour white, with rich maroon spots. A neat, pretty species. 21s.

M. PICTA (Painted M.); Brazil.—The ground colour of the whole flower is a bright pale orange, very prettily spotted and striped with red and purple. A pretty, freely-flowering, and easily-grown species, very suitable for small collections. 10s. 6d.

M. TENUIFOLIA (Slender-leaved M.); South America.—This is somewhat allied to *M. Macleei*; the principal difference being its ground colour, which is of a purplish cast, with spots and blotches of clear yellow upon it; the foliage, too, is somewhat longer and broader. Mr. Lyons remarks, very justly, that "when it is in flower it is very striking; and few will see it without remarking its freshness, and the pleasing green colour of its foliage." 21s.

M. TRIANGULARIS (Triangular-leaved M.); Guatemala.—Flowers of a rich dark brown ground colour, spotted freely with crimson. This plant has a resemblance to *M. tenuifolia*, but its leaves are larger and triangular shaped. Very neat and pretty, but rather scarce. 42s.

Culture—Soil.—The compost we have found to suit them best is formed of rough fibrous peat, broken into small pieces, and all the finer portion sifted out of it. This will form the main body of the compost to the amount of three-fifths, add one part of chopped sphagnum, and another of broken potsherds, and pieces of

charcoal, about the size of a pigeon's egg; mix these well together at the time of potting. Fill the pots half-full of drainage, and pot when the plants begin to grow. *M. tenuifolia* and its allies require division every other time they are potted, and bringing down to the raised heap of compost in the pots; otherwise, being of an ascending habit, they would soon become unmanageable. To keep them firm in the compost, pin them to it with hooked pegs, they will soon fix themselves to it by new roots. The rest of the genus may be potted in the usual way. When growing they require the customary treatment of moisture in the air and at the roots, but when at rest a drier and cooler treatment. The temperature of the Mexican house is suitable for them. We shall conclude our week's essay by a brief notice of a rising collection of orchids belonging to H. Wheat, Esq., of Norwood Hall, near Sheffield. It is under the judicious treatment of Mr. Joseph Ellis, the gardener. A correspondent has sent us a list of the species now in flower there, which we shall give; such lists being useful to show to new beginners what they may expect to flower, with the same excellent management, at this season of the year:—*Acineta Humboldtii*, *Ansellia Africana*, *Cypripedium caudatum* (very rare), *C. barbatum*, *C. Javanicum*, *Cyrtorchilus filipes*, *Chysis aurea*, *Cœlogyne cristata*, *C. humilis*, *Dendrobium Ruckertii*, *D. Cambridgeanum*, *D. densiflora* (a large plant with 12 spikes), *D. macrochilum*, *D. Wallichianum*, *D. nobile*, *D. Jenkinsii*, *Epidendrum selligerum*, *E. Stamfordianum*, *E. aloifolium*, *Govenia fasciata*, *Lycaste aromatica*, *L. Harrisonii*, *L. Deppei*, *Oncidium papilio*, *O. tricolorum*, *O. stramineum*, *O. Carthagenense*, *O. sphacelatum major*, *O. leucochilum* (three spikes much branched), *O. altissimum*, *Phaius Wallichii*, *P. bicolor* (two varieties), *Trichopilia suavis*, *T. tortilis*, *Stanhopea eburnea*, *Odontoglossum pulchellum*. In all thirty-six species of orchids in flower in April, and that in a collection that has not been more than six years in forming—a result very creditable both to the spirit of the collector, and to the skill of the cultivator.

T. APPLEBY.

FLORISTS' FLOWERS.

DAHLIAS continue to pot off, and harden by full exposure to the air and light on all favourable occasions. See that the ground in which they are to grow and bloom be in a forward state for receiving them towards the end of May. *Dig deep and manure hard* is a golden rule for the successful culture of this fine autumnal flower. Do not forget the RANUNCULUS BEDS. Dry weather may now be expected, and then they will require abundance of water.

T. APPLEBY.

THE KITCHEN-GARDEN.

ASPARAGUS.—Care should be taken in cutting, or much mischief may be done to the crowns and buds. A long narrow-pointed saw-edged knife is no doubt the safest and best tool for the purpose, and if thrust nearly perpendicularly down close to the shoot intended to be cut, the numerous other shoots and buds pushing from the crowns will thus be more likely to escape being cut off, or otherwise injured underground.* Asparagus coming

* We prefer Mr. Weaver's mode of letting the shoots grow six or eight inches above the bed before it is cut; and then cutting it level with the surface. All is then high-flavoured and eatable.—ED. C. G.

in for the first time this season, should at first have only the strongest shoots cut, and the small ones should be allowed to remain, and continue to grow. Old beds, in full cut, should have all cut off for the first four or five weeks, and then only the best for the remainder of the cutting season. Salt may be applied to advantage, in moderate quantities, throughout the growing season, and wet or showery weather should be chosen for its application, either by sowing broadcast, or in a liquid state. We practice the dissolving it in liquid manure, and then applying it, with great advantage, and we always choose, if possible, showery weather for applying liquid manure to all out-of-door plants and vegetables, as it may then safely be applied at much stronger proof, and in less quantities, and also with safer and more beneficial effect. Liquid manure applied when the soil is dry and hot requires much diluting, and plenty of water applied to wash it in, so that the extreme fibrous roots may have an opportunity of feeding on it; at the same time, under such circumstances, much of its beneficial properties will evaporate away, and there is no power of condensing them to our knowledge, by any other means than the liberal use of charcoal, which valuable article we make use of very liberally, and have done for many years; and we have also particularly observed its power, on many occasions, in sucking up or condensing the most fetid odours. Plants of all kinds, either in doors, or out, where charcoal is liberally made use of, always maintain an healthy, vigorous growth. Liquid manure, when applied in hot, dry weather, without being very liberally diluted, has a tendency to burn and injure vegetation; and if it is not possible, at all times, to apply it in showery or wet weather, we take care to do so when cloudy weather prevails, and in the evening, washing it in liberally, so that it may be evenly distributed for a considerable depth in the soil; besides this, we always summer mulch our crops, and always take care to apply the largest bulk of water to the shady side, and never over the foliage of any kind of crop; a branch of spray brush-wood is thrust into the nose of the water-pots, and the applicant, with one pot in each hand, pours the water easily where it is required, without danger of surface-binding the soil, or injuring the foliage of the plants.

Preparation should be made for putting out a small quantity of the early sown *Celery Plants*, and pricking out the main crop as early as they can be handled. All kinds of seeding plants, as they appear, should have the surface of the soil carefully broken with a rake, and any deficiency of plants should be at once attended to, by sowing and transplanting. Sow tall *Peas* and *Beans* at this season in the coldest part of the garden; stop the early *Peas* now in bloom, and get all the tall kinds securely sticked.

FRAMING.—Maintain a kindly surface heat, shut up early with kindly humidity on fine afternoons; set the fruit both of *Cucumbers* and *Melons*, and keep the vine thin and nicely trained; wash the walls of pits with soot, sulphur vivum, and hot lime, and also all frames as they become vacant. We use some boiling water to slack a few stones of new lime, then add the soot and sulphur, incorporating it well together, and applying it well over every part of the pit or frame,—this is a great preventive of red spider and aphids. Should the canker appear, dredge the affected parts with newly slaked lime. Prepare for getting the ridge cucumber bed made. If *Mushrooms* are desired in the late summer and early autumn months, the present is a good time to spawn the beds.

JAMES BARNES.

MISCELLANEOUS INFORMATION.

OUR VILLAGERS.

By the Authoress of "My Flowers," &c.

ONE very fruitful cause of evil among the lower orders in the rural districts, is the custom of Sabbath 'bird-keeping.' I am sorry to say the higher classes are equally to blame in this matter, because they employ children for this purpose; and whether we do a wrong thing ourselves, or cause it to be done by others, the guilt is the same. At particular seasons of the year, when the grain is first sown, and when it is ripening in the ear, boys are set to drive away rooks and other birds which infest the fields, which is all very right during the week, but unhappily no difference is made on the Sabbath day, the same noise and uproar is continued, and during these times of the year, the poor little children are suffered to desecrate the Lord's day, and receive pay for doing so.

I am quite aware that we may generalize too much in our remarks upon habits and customs. We may erroneously imagine that other localities pursue the same systems that are carried on in our own vicinity; and I am willing to hope that in most neighbourhoods this practice is not resorted to. Still, as I see it so constantly before my eyes, and know it to be the case in the surrounding districts, I cannot forbear bringing it before the attention of the cottage gardeners, in the hope that where it may now prevail, it will be hereafter discouraged; for it is full of evil and cannot be too steadily opposed. Sabbath bird-keeping is Sabbath breaking. We are told to "train up a child in the way he should go, and when he is old he will not depart from it." Alas! if children are trained in the way they should *not* go, they are still more obedient to the guiding hand, because the natural heart delights in sin, and the feet hasten gladly along its broad, inviting road. When a parent allows his child to turn his back upon Sabbath duties, upon the public worship and service of God, and upon His strongly enforced command, "*Remember,*" to keep it holy; when he allows his child to disregard the "pearl of days," and spend it in wandering about the fields, screaming at birds, rattling marbles in a tin can, or firing a gun continually to protect the grain, he is giving that child a terrible lesson in sin. He is teaching him to disobey the commands of God, and handing him over to depravity and ruin. He is laying the first stone of a prison, if not planning the first beam of a gibbet.

The unhappy victims of madness and folly, who reaped the reward of their outbreak in the year 1830, by transportation in many cases, and by death in some; those, I mean, belonging to our own neighbourhood, solemnly expressed themselves upon the subject of Sabbath breaking; declaring that it was the first step in their career of crime; and they implored the clergyman of their own parish, who visited them in prison, to convey a charge to their families and fellow-parishioners, "to keep holy the Sabbath day." How many of these poor men had been brought up to 'keep birds' on the Sabbath, I cannot tell; but disregard of that day was confessed by them all to be the beginning of their troubles. The dying words of one of their former cympanions, and the parting exhortation of many others, were delivered with much solemnity from the pulpit to a listening congregation. It made a deep impression at the time, but I fear it has passed away, for many are still treading the same devious way.

It is a very sad and painful thing to see, on the way to church, when the bells are chiming, and the congregation are gathering from all points, little boys sitting under hedges, or loitering about the fields, screaming half their time, and playing at marbles or getting into mischief the remainder; in their working clothes, uncared for, and taking no part in the sacred duties of the day. The master who pays them, and the parents who sell them, are going contentedly to church, never considering that the souls committed to their charge will be required at their hands; but quite satisfied that the rooks must be driven away on Sundays as well as on working days, and, therefore, that the Bible precepts are not intended to interfere with what *must* be done. Is not

much evil that takes place in a parish to be traced to such opinions and such practises as these? How can a parent chastise for faults towards himself, when he teaches his child to transgress the commands of a heavenly Parent? How can a master expect faithful service, when he hires his neighbour to rebel against his Master in heaven?

A few months ago, two idle boys brought up in neglect and sin, went out to poach; they meant only to catch a few rabbits, as they said, and, perhaps, as they *thought*; but one step leads easily to another, as they found to their cost. They were going to take what was not their own, and whether that thing was a rabbit or a sheep, the theft in the sight of God is equal. There is no *little* sin. The boys were unable to catch any rabbits, therefore, they determined to rob a hen-roost belonging to a neighbouring farm; and succeeded under the cover of night. Dread of detection induced them to leave the parish; so one of the lads stole two sovereigns from his own mother, and absconded with his companion, and a deadly weight of guilt on his head.

The robbery was quickly traced to the two boys, whose habits were well known, and whose disappearance raised the first suspicion. They were pursued and taken; and are at this time still suffering hard labour in the county jail. I saw them returning from an examination before their committal, in the hands of the constables, with a group of boys following them, and people standing at their doors to see them go by. What a sight for their parents—for *every* parent! How it must have gone to the hearts of those who had spared the rod—who had not laboured and prayed for the souls of their children—who could not feel that the sin laid not at their own door! And what a lesson to those who allow their little ones to run riot, to forsake the guide of their youth, to follow their own little headstrong wills, and dishonour God and His righteous law! above all who for the lucre of gain, peril the eternal happiness of those whom God has given them.

Let us strive to honour our Maker and Redeemer in all we do; and let us strive to teach those who are coming after us to do so too. Our fields will stand quite as thick with corn, when we send our little bird-keepers to church and school, as they do now; and orchards and gardens will be far more safe, with an overflowing church and quiet Sabbath, than when our children are taught to despise the commands of the Lord, and grow up in ignorance and sin. A little plough-boy, whose week days are spent in honest toil, may learn on the Sabbath enough to guide him on his heavenly way, and keep him from the "fowler's" snare. What is the value of a measure of wheat compared with our neighbour's soul? A special blessing is promised to those "who turn away their feet from doing their own pleasure on" God's "holy day;" they shall "ride on the high places of the earth," and be fed "with the heritage of Jacob, for the mouth of the Lord hath spoken it." Let us even in what we may think trifles, remember and obey this word.

HISTORY OF AN APIARY.

In my two last communications, I entertained your readers with an account of the method pursued by me last summer, in forming artificially several *prime* swarms. I have now to explain the after treatment of the old hives. And first as to my own stock:—Exactly 19 days after the issue of the prime swarm (viz., the 30th of May), all the bees which during this time had been hatched in the hive, were driven, or swept out of it (as many as could not be driven), into an empty bell-hive in the usual manner; this done, several of the freshest looking combs (some containing brood left by the old mother, but no eggs or grubs deposited by the young queen) were taken from it, and adjusted in the hive* destined for the reception of the swarm, each comb being carefully affixed to its bar. The bees were then compelled to enter it, and the hive placed

* One of Mr. Goldings, 11 inches wide by 9 inches high.

on the old stand. At the same time the old stock was broken up, and its store of honey, not exceeding 4 lbs., taken from it.

The swarm obtained in this manner fell very short of the size of an ordinary cast in point of numbers, while many of them were unusually small, some being scarcely a *third* of the common size. No doubt this was owing to the paucity of nurses for the first week after the issue of the prime swarm, and the consequent imperfect quality, or insufficient quantity of the food supplied at the time to the *youngest* grubs. Most of the brood had left the cells, except about 200, some of which were dead, probably from the same cause. The most interesting result of the experiment, was, that the bees had reared their queen artificially. *Six royal cells*, constructed in the *centre* of the combs, as is usual under such circumstances, were found in different parts of the hive; one of which only had as yet issued from her cradle. Four of the other cells were restored to the bees in their new hive, in order to give them every chance of success, in the event of any accident having befallen their young and inexperienced queen. The fifth, which was constructed out of three *drone* cells, in the *very centre of a large comb*, intended for the breeding of drones exclusively, I had the curiosity to open. It contained a fine fat white grub, still furnished with the whitish looking matter (food, no doubt), which is usually found in royal cells. It had, evidently, but recently ceiled itself in, and wanted several days to its perfect development. This alone would prove it to be a *drone grub*, and not a worker, for otherwise it would have been in a much more forward state, seeing that this was at least the 21st day since the egg was laid, and queens are often, in fact, *generally*, reared in *sixteen* days. I regret that I did not also examine the condition of one of the other cells, still closed, constructed out of worker cells, for these had delayed their exit five days beyond their usual time, but I should, doubtless, have found their tenants, if alive, in a much more forward state than this favoured drone grub. If my conclusion respecting the sex of this *quasi-royal* nymph be incorrect, the bees must have transported a worker egg to this place; but it is more easy to account for the fact by supposing a simple *fault of instinct*. It is a singular occurrence, however, of which I never met with an instance before.

"June 10th. (Extract from my note-book).—Examined the condition of 2nd D, the swarm above-mentioned (so called because it took the place of the hive fumigated in the early spring), and found that the bees had constructed several portions of new comb; but they seemed few in numbers, though very busy pollen gathering."

"June 11th.—Assisted Mr. C. in forming two artificial casts out of his three old stocks, which had yielded us two fine swarms between them just three weeks ago. The first of these old hives (that out of which the first and single swarm had been forced on the 21st of March) was strong in numbers and comparatively rich; for on breaking it up, after forcing all the bees out of it, we took about eight pounds of honey, some of which was very pure. The swarm also weighed two pounds and a half, and numbered, therefore, about 12,000 bees, of which some 1500 were drones. These bees had also reared an artificial queen, as was evident from the discovery of several royal cells similarly situated as in the other hive; and there had been no eggs laid since the departure of the old queen;—this, however, is not absolutely conclusive evidence. As in the former case, so here some portion of the best looking combs was fastened to the roof of the new hive, both as a guide to the bees and a help to their labours." I am always careful to save them as much labour in comb-making as possible, especially on the occasion of locating a swarm in a new hive, I therefore give the bees as much good comb as I happen to have by me, *that the queen may commence laying eggs at once*. A good queen will, under such favourable circumstances, lay some 5000 eggs in the course of the following week—that is, where a sufficient quantity of comb is ready for her use; and she lays faster than the bees can fill the cells with honey. The rule is, that the less abundant the honey at the time of the swarm's first settlement, the greater number of eggs the queen will lay (which will tend ultimately to the greater profit of the bee master), and *vice versa*.

"The formation of the next artificial cast gave us no little trouble, chiefly because it was our aim to unite all the bees of the two remaining old hives together; for they were both weak in population, as I had expected. They were driven together in the evening, as well as could be managed, into a common bell-hive; as, however, many of them still remained among the combs of both hives (of one more particularly, whose queen was suspected would not ascend—the same queen, in fact, who had refused to ascend three weeks before), the hives were set one over the other, and located for the night in a sheltered arbour, at the same time that the united swarm (which had the young queen, *also artificially reared*, of the most vigorous stock) was placed on a stool exactly half-way between the positions which the old hives had occupied previously, that the bees of both hives might the more readily take to their new home."

"June 12th.—This morning early the combs were cut out of the old hives one by one, and the bees swept off them in front of their more fortunate companions. Much brood was found in one of them, as well as the *old queen*, who had twice refused to obey our summons to surrender. She died shortly after from injuries received in the process of cutting out the combs, leaving the throne of the united swarms to her younger rival, who cannot have been hatched above a day or two. All the brood—drone and worker—for both were found in this hive) which, together with some large pieces of fresh empty comb was arranged in the new hive (13 inches by 10), we contrived to save. The hive was then made to take the place of the temporary bell-hive. This being set over it, and all means of egress closed, save through the hive below, was quickly forsaken by the swarm which still occupied it, who took possession of their ready prepared abode so readily, that the upper hive was removed in a day or two. I may add, that not more than two pounds of honey were taken from these hives together."—A COUNTRY CURATE.

TO CORRESPONDENTS.

** We request that no one will write to the departmental writers of THE COTTAGE GARDENER. It gives them unjustifiable trouble and expense. All communications should be addressed "To the Editor of The Cottage Gardener, 2, Amen Corner, Paternoster Row, London."

NAMES OF BULBS (*Rhyd y Gris*).—The two bulbs you sent are some kind of *Tropeolum*, but until they flower it is impossible to declare *certainly* the species. They require, in cultivation, a light sandy soil; the top of each bulb should be above the surface. They may grow this year, but it is rather uncertain; keep them in the greenhouse, in the pots, all the winter, and they will most likely grow in the spring. The two bulbs were both split with the stamping-iron of the post-office.

POLYANTHUS (*F. L.*).—Your polyanthus blooms were so dried in passing through the post-office that we cannot tell with certainty its name, but we have little doubt it is *Pearson's Alexander*. The report of the proceedings of the National Floricultural Society will be published in THE COTTAGE GARDENER: the first report is in the 133rd number, page 30.

CLIMBERS IN GREENHOUSE (*Lillian B.*).—We are afraid your plan of planting climbers in large tubs in a cellar under your greenhouse will disappoint you; air is almost as necessary to the roots of plants as to their branches and leaves. You may try it; and, if you do, we should be glad to know the result. The two climbers suitable for that purpose are *Wisteria sinensis* and *Bignonia grandiflora*. For the front part, to plant in the border outside, procure *Mandevilla suaveolens* (this loses its leaves in winter) and *Zichya inophylla floribunda*.

FERNS FOR WARDIAN CASE (*Amor Filicium*).—Supposing your Wardian Case is placed in a cool temperature, any of the following ferns will answer for suspending in it, the roots to be enveloped in a ball of moss, or placed in small baskets; if in moss they should be taken down occasionally, and the balls dipped in rain water. *Woodwardia radicans*, *Drynaria Billardieri*, *Asplenium odontites*, *Lycopodium denticulatum*, *L. caesium*, *Doodia lunulata*, and *Adiantum pubescens*. Your *Platyloma rotundifolia* being a New Zealand fern requires to be kept in a drier atmosphere than that in the case. The *Blechnums* require to be kept in an intermediate house, excepting the British one, *B. spicant*, otherwise called *Lomaria spicant*, and not in a very exposed situation, and kept moderately dry. The reason why they do not thrive in a Wardian Case is, that it is too moist for them, and there is not sufficient air.

AQUATICS (*Ibid*).—Greenhouse aquatics: *Aponogeton distachyon* and *Nymphaea odorata*. Hardy aquatics: *Menyanthes trifoliatum* and *Hottonia palustris*.

AURICULA CULTURE (*F. H.*).—Increase your auriculas by slipping off the young suckers that will spring from the base of the plants. They should be set out of doors, as soon as the bloom is over, on a bed of ashes, on the east side of a low wall or hedge. *Crocuses* and *Tulips* must remain in the earth till their leaves turn yellow, then take them up, keep them dry, and plant them again in November. Keep your *Daphne*

Indica in the greenhouse till the end of May, then place it out of doors till September, giving it due supplies of water, and then bring it into the greenhouse again.

TRICHOMANES BREVISETUM (*Incubator*).—Your remark, that this fern is difficult to cultivate, is perfectly true if attempted in the ordinary way. It is found in the neighbourhood of waterfalls, where there is much shade and a constant supply of moisture both in the air and soil. It grows in black spongy peat. Now, to grow it successfully, these circumstances must be imitated: place the plant in peat mixed with stones, in a shady place, but not too much so; cover it with a hand-glass, and sprinkle it slightly with rain-water every day; with this treatment the plant will probably surprise you by its beautiful growth.

LIST OF HOLLYHOCKS (*A Lover of Hollyhocks*).—You wish for a list of 30 hollyhocks, and the following are first-rate varieties, and all distinct. — *Atrorubra* (Baron), *Bicolor* (Chater), *Coccinea* (Baron), *Comet* (Chater), *Delicata* (Baron), *Delicatissima* (Bragg), *Enchantress* (Chater), *Esquisite* (Parsons), *Flower of the Day* (Bragg), *Horatio* (Bragg), *Magniflora* (Bragg), *Magnum Bonum* (Baron), *Model of Perfection* (Chater), *Maiden's Blush* (Bragg), *Mr. C. Baron* (Chater), *Napoleon* (—), *Obscura* (Chater), *Purpurea elegans* (—), *Perfection* (Bragg), *Prince of Orange* (Bragg), *Princess Royal* (Bragg), *Princess Helena* (Bragg), *President* (Bragg), *Queen* (Baron), *Rosy Queen* (Chater), *Rosea alba* (Chater), *Rosea elegans* (Bragg), *Sulphurea elegans* (Bragg), *Snowflake* (Bragg), *Walden Gem* (Chater).

VARIOUS QUERIES (*Cantiensis*).—Sow the seeds, as *Phlox Drummondii*, *Petunia*, and *Globe Amaranth*, in a gentle hotbed. See an account of the culture of the latter in a late number. They will all flower about July this year.

CELESTINA AGERATOIDES (*Ibid*).—This is a good bedding plant, and it is a pale blue; a border of variegated geraniums would set off the colour. *Verbena pulchella* and its varieties make very pretty small beds or edgings for scarlet geraniums. It is a distinct species. Plant *Verbenas* to procure bloom to show in June, as soon as the cold nights are past, as early in May as possible. Keep some in a frame in large pots, to secure early bloom. Your selection of *Hollyhocks* is a good one, and also your *Pansies*. Add the *Duke of Norfolk* to the latter.

LOBELIA RAMOSA (*F. H.*).—The "red and white striped" *Lobelia ramosa* must have been a mistake of some shop-boy in writing the labels; there is no such plant known. *Nasturtiums*, or, better, *Tropæolum majus*, sown about the 20th of April will be in bloom by the 1st of July, perhaps a little earlier if the situation and season are favourable; they will do in beds or as edgings to large beds, but their large leaves must be cut once in ten days for three months; plant them a foot apart each way, or sow the seeds four inches apart, and thin afterwards, if they all grow. *Marvel of Peru* does best in the open ground.

BEDDING GERANIUMS (*Royalist*).—Number one is not *Spleenii*, or any thing like it; and number two does not even belong to the section of *Quercifolium*; and neither of the two will answer well as bedders by themselves. We now speak positively.

FLOWERLESS BIGNONIA (*F. G.*).—Not an unusual circumstance, and chiefly caused by rearing plants from American seeds. Some of the seedlings turning out absolutely barren last year, we rooted out one of them after a growth of eight years without a single flower. Try severe root-pruning.

IPOMÆA RUBRO CÆRULEA (*J. W. F.*).—This should be loosed from its first support and brought to the outside of the new trellis, and spread over it in all directions as it grows. The first part of your note we cannot understand; pray write more plainly what *Ipomæa* you wish to know how to treat. Trellis for *I. quamoclit* quite right. We are glad to find your hotbed answers built on the plan Mr. Appleby described in *THE COTTAGE GARDENER*.

GERANIUM (*W. M.*).—Your geranium is called *Colleyanum*; it is useful as an early blooming kind, but for shape, or any other good point, it is good for nothing.

BEES (*A Country Rector*).—Bees are driven from one hive to another by inverting the hive they are to be driven from and placing upon it an empty one, making the union secure by tying a napkin round, and gently tapping the lower hive. In artificial swarming the queen must be driven from the old hive, and a new queen is made by the bees left in the old stock. No honey escapes in separating a glass or small hive from a stock. *Payne's hives* are 1s. 6d. the large hive, and 1s. 8d. the small one to be put on it; they can be sent by rail. For economical bee-keepers *Payne's Bee-Keeper's Guide* is the best; for those who can afford box-hives *Taylor's Bee-Keeper's Manual*. Both are full of information useful to all bee-keepers, and so is *The English Bee-Keeper*, by *A Country Curate*, just published, which we will notice more fully.

MOTHS IN HIVES (*Another Country Curate*).—You must endeavour to destroy the moths, or they will soon destroy your bees; the maggot of the moths will be found between the hive and floor-board, which must be daily examined. Driving cannot be done at this time with advantage, autumn is the time; put your swarms into *Payne's hives*, and drive the old stocks in autumn. A small hive put on the stock hive will retard their swarming, and if a supply be given prevent it entirely; but if your hives are so old, the combs so black, and infested with moths, let them by all means swarm. Small hives should be put on the first week in May. We painted hives last week, all having bees in them.

BEES (*J. W. C.*).—There should be a tube of perforated zinc reaching through the hole to the bottom of the glass, upon which glass a piece or two of guide-comb should be fixed. The lime, or any kind of fastening for the glass is unnecessary, remove it immediately. Where is the difficulty of setting Ducks Eggs found floating in the water? Is it feared that *Genii* would come forth from them?

NAMES OF PLANTS (*M. C. R.*).—Your plant is the White-stalked *Marchantia*, *Marchantia cruciata* of Withering. (*R. F. R.*).—1. *Adiantum capillus-veneris*. 2. *A. cuneatum*. 3 and 5. Uncertain. 4. *Lycopodium helveticum*. 6. *Mesembryanthemum acinaciforme*. 7. *M. inclaudens*. 8. *Kennedyia macrophylla*. (*S. P.*).—No plant came

with your note. (*M. A. P.*)—*Omphalodes verna* (Spring Venus's Navelwort); a very pretty rock plant; native of the south of Europe. (*J. S.*)—A young frond of *Pteris serrulata*. The name *Aphelandra* is derived from *apheles*, single, and *aner*, a male, alluding to the anthers being one-celled. (*A. M. G.*—*Co. Cork*).—Your star-like orange flower *Gazania rigens*, a greenhouse evergreen from the Cape.

AGE OF SEEDS (*Sigma*).—We are obliged by the trouble you have taken in copying Cobbett's list of the age to which seeds preserve their vegetating powers, but it is not a truthful guide, therefore is worse than silence. We should be sorry to depend upon Brocoli seed four years old; and we should have no fear of Peas and Beans, if well kept, though two years old. We shall be obliged by any reader sending us his actual experience of the time to which any seed may be kept, without losing its powers to vegetate productively.

STALL-FEEDING SHEEP (*Ibid*).—Will some of our readers answer these queries—"At what age should they be put up? How should they be fed and managed?" The advantages of spade-husbandry can scarcely require any demonstrations, but we will insert those sent to us.

ASPARAGUS BEDS (*G. F. W.*).—Though you are digging into the gravel this will not be injurious, provided the drainage is good, and the soil you put in rich. The roots at the sides will turn from the gravel into the better soil. Four rows in a bed is a bad arrangement, because of the difficulty of weeding and cutting in a broad bed. Two rows are far more convenient than even three, and single rows still more so.

CRUMBLY BUTTER (*Legcolium*).—This certainly does not arise from the cows being fed upon carrots. Can any of our readers state a remedy? For twopence you can obtain a copy of the number with the two missing pages.

AMMONIA WATER (*R. H.*).—Mr. Beaton evidently means that he employs the house slops for syringing the green fly on his roses, and of course diluted with water; but no one can give the proportions as a general rule—very weak and often is the best one.

JONQUILL (*Betruss*).—This name is properly pronounced Jhone-keel, but John-quill is the usual pronunciation. It is a corruption of the Italian *giunchiglia*, which means the Rush Lily. Your notice is probably bad in law; but we cannot undertake to give legal opinions.

RECEIPT (*T. P. L.*).—Try the experiment. *Guano water*, as a liquid manure for your flowers, may be made with half an ounce to a gallon.

CUTTINGS OF ROSES (*G. P.*).—It would be highly improper to ask, nor would it be done; for where must the stop come—at the 10th, 100th, or 1000th?

DISTEMPER IN DOGS (*X. O. X.*).—This is too varying in its symptoms to prescribe any mode of treatment of universal applicability. Vaccination certainly will not prevent its occurrence; nor is a black rim on the gums a sign that a dog has had the disease. Giving salt as you did to your puppy, or any other emetic, is the best medicine you can give a dog upon the first appearance of the disease; but dashing cold water over him is a very doubtful application. The severest case we ever knew in a pointer puppy was cured by administering emetics at intervals, composed of one grain calomel and one grain tartar emetic, keeping the dog warm, and giving him a nourishing diet of milk and strong broth. Read what Mr. Youatt says in his work entitled *The Dog*.

DOUBLE-WHITE VIOLET (*A. M. G.*, *Co. Cork*).—Divide the old stool into single plants, such as that sent; pot into 4-inch pots, one plant in each; place under a north wall during the summer months; shift into larger pots about the first of August. Or the old stool may be divided as directed above, and the plants be inserted in a cool border, to be potted about the first week in September; cut away all runners during their summer growth in the border. We cannot say what makes the points of your *Carnation-leaves* become deformed and brown, unless we know how you are cultivating them: similar effects arise from very dissimilar causes.

CHARRING REFUSE (*J. B. C.*).—Mr. Barnes says—"The most convenient size we find to form the conical heap for charring is about seven feet diameter at the base, exclusive of the outside casing. Such sized heaps, with attention, may be properly charred from the top to the bottom, on an average, in 30 hours. The influence of the weather of course has much to do with the matter, as well as good attention. We find, at times, that the same sized heaps may be properly charred in 24 hours, while occasionally the same will take even 36 hours. If larger heaps, or kilns, are formed, they will take two nights and from two to three days, which is not so pleasant if the whole attention should devolve on one person. Our system is to have from four to six heaps or kilns all ready to ignite at the same time, which may be well watched by one attendant, and two batches a week charred and stored, without interfering with Sunday. In charring billet wood, if a conical kiln of seven feet diameter is ignited at five o'clock on the morning of Monday, it will be completely finished, and the fire smothered, before six on Tuesday afternoon. The batch drawn, sifted, and sorted early on Wednesday morning, and another placed for charring the same day, to be ignited early on Thursday morning, and this will be ready for taking out on Saturday morning. We always store the fine charrings for garden-seed sowing, mangold wurtzel, turnips and Swedes, grass, &c., &c., all and everything of which are greatly benefited by its application. You are right in supposing the stakes and centre billet are bound together at the summit, which, as a matter of course, is only a temporary arrangement to keep them from bilging, and the cavity in the centre from getting choked; a hay or straw band, a bramble, or a wythe, is made use of for the purpose."

ZAUCHSNERIA CALIFORNICA (*J. P.*, *Matlock*).—Good plants of this, for bedding-out, may be purchased at the London nurseries for 6s. per dozen. You can have any volume you wish for of *THE COTTAGE GARDENER* for 6s. 6d. Your plant is *Arabis albidia*.

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WEEKLY CALENDAR.

M D	W D	MAY 8—14, 1851.	WEATHER NEAR LONDON IN 1850.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bef. Sun.	Day of Year
			Barometer.	Thermo.	Wind.	Rain in In.						
8	Th	Emperor Moth seen.	29.573—29.369	51—39	N.W.	0.22	22 a. 4	31 a. 7	1 28	3	40	128
9	F	Burying Beetle seen.	29.933—29.742	54—29	N.E.	—	20	32	2 3	8	3 44	129
10	S	Flvcatcher seen.	29.997—29.959	60—43	S.W.	—	18	34	2 33	9	3 47	130
11	SUN	3 SUNDAY AFTER EASTER.	29.981—29.952	62—47	S.W.	0.01	17	36	2 59	10	3 49	131
12	M	Wall Butterfly seen.	30.002—29.946	65—35	N.W.	0.01	15	37	3 24	11	3 51	132
13	Tu	Old May Day.	30.109—30.082	62—33	N.E.	0.10	14	39	3 48	12	3 53	133
14	W	Orange-tip Moth seen.	30.082—29.916	59—41	S.W.	—	12	40	4 11	13	3 54	134

As might be expected, whenever an amateur writes competently upon any art with which he is thoroughly conversant, he usually writes more instructively than does a contemporary practitioner of that art. This is to be expected, because the amateur knows, from comparatively recent experience, the description of information of which he most stood in need, when first requiring instruction. He begins at the beginning of every operation; he tells his readers every point about which care is required; whereas, the professed artisan thinks "every body knows" all the initiatory practices, and passes on to those which remain as difficulties, even to the proficient. Nor is this the only defect usual in the teaching by a practical man. He is, for the most part, a man of facts; he knows when and how a plant is to be propagated, and he tells you so in the fewest possible number of words. Now, we admire brevity as much as brevity can be admired by any one who feels acutely that art is long, and life short; yet we must acknowledge our conviction that brevity is not suited for teaching the uninstructed, nor for decoying the careless to be attentive. Repetition and gradual explanation are required for the first, and amusement blended with instruction for the latter. We are made fully sensible of what we have here advanced, by the books now open before us. *The Complete Gardener*, by G. London, and H. Wise, two practical gardeners, and *The Clergyman's Recreation, shewing the pleasure and profit of the Art of Gardening*, by the REV. JOHN LAWRENCE. Editions of these books were published within a year of each other, early in the last century, yet two more striking contrasts—a more notable instance of the dry and brief, being born twin brother of the agreeable, cannot be quoted. Yet they both treat of the same art, and both contain a mass of useful information, for Mr. Lawrence places upon his pages a record of his own experience, and that experience was long and enlightened. No difficulty in gardening exists, or can exist, as he well knew, but it may be overcome by skill well-directed. It would have appalled most amateurs to have found that the enclosure, called the garden, at the rectory of Yelvertoft, in Northamptonshire, was barren and shallow, resting on a wet white clay; but it did not stagger Mr. Lawrence, for he addressed himself to its reclamation, and in three years harvested from it, not only the primest of kitchen garden crops, but the choicest of fruits. The secret of his success was his knowledge of the benefit of draining, of shallow planting, and of preventing the radiation of heat from his walls. Science guided his practice, for he was a naturalist as well as fond of horticulture, especially that part of it which includes the culture of fruits, priding himself upon the richness of his deserts. Working in his garden, he tells us was "the best and almost only physick" he took. He is represented as hospitable and generous, but we cannot entertain a very high opinion of his honour, if Lintot the bookseller adhered to the truth in complaining that in his "New System of Gardening," in different words he had republished what he had previously sold to him (Lintot) in the form of "The Clergyman's and Gentleman's Recreation." But we think there is no ground for the accusation. Mr. Lawrence's *New System of Agriculture, being a complete body of husbandry and gardening*, embraces instructions given in his other works, but the instructions are in another form, and the high-priced folio, which the "New System" fills, could not have interfered with the far cheaper octavo, which relates to little but fruit-culture. This work, *The Clergyman's Recreation*, published in 1714, is concise, but, perhaps, there is no work that has less of error in its precepts. In his directions for pruning, training, and the preparation of an infusion of

wall-nut leaves to destroy worms, &c., he has recorded his practical knowledge of various directions which have been in late years recommended as improvements. It is chiefly confined to the cultivation of wall-fruit. He mentions nothing about apples; and is much too pragmatical upon the diseases to which trees are subject. *The Gentleman's Recreation*, appeared also in 1714, and, as he states in his introduction, is "an Appendix to the former," or Clergyman's Recreation. It is a miscellaneous collection of notes for the most part relating to the cause of barrenness in fruit-trees; and the superiority of fresh earth to some plants rather than dung.—The most original observations are upon the benefits of horizontal shelter in preventing the blasting of wall-fruit. The observation upon permanent nails to which to tie the branches of wall-trees are equally worthy of the claim of novelty. *The Fruit Gardener's Kalender*, in 1718, is composed of many excellent observations and directions. He mentions as a common practice ringing the branches of fruit-trees to make them bear, which he calls "circumcising" them.

The remaining events in Mr. Lawrence's biography that are preserved to us, embrace little more than mere dates, for even the place of his birth and his parentage are unknown. He attained to his Batchellorship of Arts whilst at Clare Hall, Cambridge, in 1688, and obtained his Master's degree in 1703, previously to moving to Yelvertoft. He remained here until 1721, when he obtained the Durham rectory of Bishops Wearmouth, became a Prebendary of Salisbury the year following, and died at his rectory on the 18th of May, in 1732. He was buried in the chancel of his church, and a stone with an inscription was placed over his remains; but this, we are told, no longer is apparent, inasmuch as that some vulgar-minded and sordid churchwarden dared a few years after to have the stone turned over, and another inscription engraved upon the reverse. Can any of our readers inform us if this be so? and if it be so, we will readily subscribe our mite to have the stone restored to its former position, asking others also to aid in this small tribute to the memory of one who must always be included among the best writers upon gardening.

It is worthy of remark, that even in those days when orthography was reduced to more uniformity than in the previous century, when sounds, rather than rules of spelling, were regarded, our author and his family spelt their name indifferently *Laurence* and *Lawrence*. As an example, we have at the end of *The Gentleman's Recreation*, this advertisement:—

"Lordships surveyed, and maps drawn of the same; timber measured and valued, with other artificers' work, and dialling in all its parts, performed by Edward Laurence, brother to the Author of this book. He is to be heard of when in London, at Mr. Senex's, at the Globe, in Salisbury Court.—N. B. In winter, and at such times as he is not surveying, gentlemen may have their sons or daughters taught accompts at their own houses, after a natural, easy, and concise method, with the use of the globes and maps, and all other useful parts of the mathematicks."

Mr. Lawrence had a son, the Rev. M. Lawrence, who died in 1791, aged 86, being the rector of High Roding, in Essex, and of St. Mary Aldermanbury, in London. He inherited the taste of his father, especially for the culture of flowers, and was distinguished among his friends for his superior blooming of bulbs in vases.

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-four years, the average highest and lowest temperatures are 63° and 40.6°, respectively. The lowest cold, 27°, was on the 11th, in 1838. Rain occurred on 61 days, and 107 days were fine.

DID you ever consider the best place for applying manure to a crop? This is a question which ought to have been suggested by every cultivator's own mind; and it is certainly a most important one to answer correctly. Yet, we believe, there is more want of thought and more carelessness existing relative to the place where manure ought to be applied, than upon most subjects connected with the cultivation of plants.

We were led to this remark by two facts recently brought to our notice in letters from correspondents. One of these (*J. E. B.*) says, that having Peas "sown in drills about three inches deep, over them I have thrown in a small quantity of soot to protect them from vermin, and then filled up the drills with the earth." Now, the result is, that though some of the rows "have come up pretty regularly," yet others "have got hardly one Pea out of the ground." Nor will they ever appear;

for the young roots were killed by the ammonia in the soot so soon as they came forth from the germinating seed. If some earth had been put over the Peas in the drills, and then the soot over the earth, it would have thwarted the mice as effectually, and would have acted as a manure to the crop; for, reduced in strength by being spread through the earth, the ammonia would not have been too powerful for the tender roots to endure. That some of the peas came up, occurred only because there happened to be less soot in contact with them, or that the soot in those instances was not so strongly impregnated with ammonia.

In the second letter to which we have alluded, the writer (*Ludlow*) says, that he has never observed any benefit arising from applying manures to old, weak, orchard fruit-trees, "though I heaped up a barrow-load round the stem of each, and dug it in close about them

in the spring following." The result, we venture to predict, would have been very different if the manure had been inserted in a trench dug a foot deep in a circle at four or five feet distant from the trunk of each tree. There are no fibrous roots close to the stem of a tree, but they branch forth, and their points, or mouths, extend in a circle around not far beyond the distance to which the outer branches reach; and it is there that manure for fruit-trees should be placed.

Crops which feed by roots spreading near the surface, and such are all the Cabbage-worts, Beans, Peas, Strawberries, &c., require the manure to be placed within six inches of the surface; for roots always travel to the soil where the most fertile matter is to be found. For the same reason, as we have often observed, for Carrots, Parsnips, and Beet-root, the ground should be trenched, and the manure turned in with the bottom spit, because this induces the top-root to strike down to it straight, and unforked.

As a general rule, it may be accepted as certain that the worst of all modes of applying a manure is in the drills with the seed. It is, usually, either so powerfully stimulating as to destroy the awakening vegetation of the seed, or remains in so confined a position as to be unavailable to the roots when they begin to extend.

In conclusion, we wish very emphatically to observe, that to arrive at a correct knowledge of the value of a manure by means of experiment, far more forethought and care are requisite than are usually bestowed upon them. 1. A space should be left without any manure being applied, otherwise there will be no satisfactory basis of comparison.

2. The larger the space subjected to experiment for each manure, the more entitled to confidence will be the result. The reason for this is, obviously, that no two seeds will produce plants of precisely equal prolificacy, Imperfect ripening of the parent seed, variance in the depth at which the seed is buried, and many other circumstances, will be more liable to have a controlling effect over the weight of the produce from a small plot of crop than from a larger. A dozen super-prolific, or defective plants, on a square rod of ground, will have an influence on the result when calculated per acre, that would be scarcely appreciated, if the experiment were made on an eighth of an acre.

3. If manures in solution are employed for soaking the seed, a similar quantity of seed of the same sample should be soaked for a similar length of time in simple water. If liquid manures are given experimentally to plants during their growth, other plants of like number and growth, and in every respect treated similarly, should at precisely the same time have simple water applied to them.

4. There should be a certainty that the manure employed be pure. No wonder that experiments are discrepant, when Mr. E. Solly has detected adulterations in fertilisers to the amount of 97 per cent. ! Even when the dung of animals is employed, it varies most essentially, and according to the food on which they are kept. The richer their nourishment the more abounding are

their excrements in the salts of ammonia and other fertilising matters.

WE regret to find, from a letter we have received this day from Mr. Brocas, that we misunderstood him when in conversation, and that he purposes to supply the *British Mosses*, and not the *British Ferns*, as stated by us at page 45. He offers 300 specimens for thirty shillings, supplying 50 at a time in a five shilling part.

GARDENING GOSSIP.

ONE of the most remarkable new features in the *Royal Botanic Gardens*, Regent's Park, is the *Plantation of Roses*. Messrs. Rivers, Paul, and Lane have contributed collections to be bloomed there after the manner of the American plants, each having the management of their own; and, if it be found desirable, they are to be all shaded during the height of their bloom. Mr. Jenkins, in his time of occupation, could never grow Roses well, and the place was much more open than it is now; so that if these gentlemen can make any thing of a show, it will agreeably surprise us, although we know that drainage and amelioration of soil will do wonders. Our own opinion is, that it will be showing Roses under great disadvantage; that the blooms will be very diminutive, and many of them out of character. The design, however, is pretty, and we shall rejoice to see the disadvantages of locality conquered.

Another striking feature here is the *Winter Garden*. A very considerable space is covered with glass, and planted with specimens, and a promenade on gravel-walks, dry and warm, when the snow is on the ground out of doors, is no inconsiderable luxury to those fond of plants and flowers. Those who visit this beautiful spot—for such it is, in spite of a good deal of bad taste—will at once pronounce for the permanence of the Crystal Palace. It will be impossible to let that structure come down again; such a winter garden never entered into the mind of man, and its capacity is boundless. It could be converted into a perpetual summer garden, though the frost and snow proclaimed it winter outside; and be it remembered that the humblest contributor to the state could enjoy it. People of all classes will call for a winter promenade. The poorest of the people should be admitted on one sole condition—cleanliness. Let everybody go to the Royal Botanic Gardens to appreciate the value of a garden under glass. The *Rockwork* in these gardens is pretty, but too toy-like; altogether on too small a scale. The *American ground* is a good feature, and the convenience for showing is greatly increased ever since last season. The ornamental water here gave a freshness to the scene; and so near London, there is nothing in the garden way half so attractive.

At a recent meeting of Florists, the subject of *Dressing Flowers* was rather warmly discussed; and it was generally admitted, even by its defenders, that it had been carried to so great an extent, that gentlemen, who only see the flower from the raiser's hand, scarcely recognised the flower when he had bought it, and grown it. Nobody inclined to dispute that the *Dianthus* tribe required it; but the idea of dressing the *Dahlia* was reprobated by the majority, on the ground that it was a flower that grewed symmetrically, and that if the petals did not open naturally, no man had a right to disguise it by forcing them open; and it was contended, that those

whose time was of so little consequence as to be wasted on this unnatural process, would always be able to beat those who cultivated them, but who would not condescend to change their character by artificial means.

As the only means of putting a stop to the practice, it was strongly recommended that all judges should examine the flowers very closely, and that they should disqualify every stand in which there should be bruised, strained, or split petals, which could always be detected in dressed flowers. For this purpose, they should use a glass, if necessary; and glasses to examine the beauties of small, and the blemishes of large, flowers, were, it was said, already provided and sold at Lockhart's seed-shop, in Fleet-street. How was it, except by means of straining open petals, which inclined to quill, that gentlemen who bought what appeared good free bloomers, found, when they had given a large price, that they had only purchased worse flowers than they already possessed, and even worse than they had actually thrown away? It gave dealers an opportunity of deceiving the public upon the chief merits and faults of a variety, and had already led to the abandonment of Dahlias by many private gentlemen.

The *South London Florists* opened their season by a show at the Horns Tavern, Kennington, on the 23rd of April; and, through some misunderstanding, as to whether the winner of a cup last year should be allowed to win it again this year, the tables were very poorly furnished. We never saw so many *Auriculas* without even a single creditable specimen; and the prizes were awarded to plants that should have been disqualified altogether. The prettiest flower in the room was a variety from the north, called "*Imperator*." A fine, green-edged, well-proportioned, round and flat pip, and though ill-grown, capable of being shown in splendid order. Perhaps there were a hundred plants staged; but we in vain looked for another good one, scarcely any were in character. The *Polyanthuses* were very discreditable to the growers. A move should really be made with this beautiful spring flower; for the April show has always been a sad mockery. There were many seedling *Cinerarias*: two called *Alba Magna* and *Queen of Beauties*, both pure white, and yet perfectly unlike each other, were the most remarkable. It is difficult to say which was the best; but either will put aside all the whites we have at present. Three other pretty ones, *Ivory's Beauty*, *Forget-me-not*, and *Auricula flora*, were above the average; but had not lost the notch at the ends of the petals.

Mr. Cole, gardener to Mr. Collyer, of Dartford, was the only exhibitor of plants worthy of notice; but gay as was his specimens, they were awfully distorted. At first sight they appear fine bushes, close, shrubby, and well-bloomed; but supported, and otherwise constrained, with fifty props, long branches bent down, and their ends turned up near the bottom, others fixed across, and the ends alone protruded; in fact, the surface made of the ends of branches bent in all manner of ways. If this kind of distortion is to be allowed with *Ixoras*, *Hoveas*, *Azaleas*, and other plants, which are perfectly able to support themselves, farewell to plant growing. The best two *Azaleas* in the room were *Optima* and the *Duke of Devonshire*; we do not mean the best grown, but the best varieties. Pansies were abundant; and in the awards of the two classes of prizes, the want of some system of judging was very apparent. In the amateur class, the first prize was given to small flowers, one half of which were out of character, the best stand in the whole room being put second. In the nurserymen's class, the first prize was given to large flowers, and the second to small ones, under the very same circumstances. Mr. Wilmer, of Sunbury, protested against the judgment, and caused some commotion,

in the midst of which Mr. James Dickson protested against an award that was unjust to him. In fact, there was very little harmony until a respectable band drowned all discordant sounds.

The *National Floricultural Society* held its second meeting at 21, Regent-street, on Thursday, April 24, R. Staines, Esq., in the chair. Certificates, *First Class*, were awarded to Mr. E. G. Henderson, for a seedling *Cineraria*, named *Marguerite d'Anjou*; habit good, form excellent, colour rich crimson, with a medium sized dark disk. To Mr. Griffin, for a seedling *Auricula*, named *Beauty of Bath*; form good, colour grey-edged, well defined, substance good. Certificates, not first class, were awarded to Mr. Hoyle, of Reading, for a seedling *Pelargonium*, named *Chieftain*; upper petals dark crimson, blotched, edged with scarlet, lower petals vermilion; a striking, handsome variety, of good habit and goodly shaped flowers. Also to Mr. Smith, of Hornsey, for a seedling *Cineraria*, named *Alba Magna*; a well-shaped, pure white flower, with a full dark disk, good shape and habit. Also to Mr. E. G. Henderson, for a seedling *Cineraria*, named *Marianne*; of excellent form and habit; white, with a lilac edge very distinct.

The following were commended by the Censors:—Mr. Turner's, of Slough, *Pelargonium* named *The First of May*, good form and habit; Mr. Ayres, nurseryman, Blackheath, *Cineraria* named *Model of Perfection*, fine form, novel in colour, which is fine shaded purple. Cut Pansies were exhibited in good order by Messrs. Brag, Turner, and Edwards. There were good collections of *Cinerarias* from the Messrs. Henderson to ornament the rooms; also, from Mr. Ayres and others. A *Rhododendron*, named *Jacksonii*, was remarkable for its colour—deep blush, with rosy-pink stripes on the outside of the petals. Mr. Turner had six good *Auriculas*. Fifty more members were elected. The Society is now fairly established, the number of members amounting to 175, besides 28 others proposed for election next month. Censors, Mr. Barnes, Mr. Kinghorn, Mr. Hamp, Mr. Parsons, Mr. Lidyard, Mr. Frazer, and Mr. Neville.

E. Y.

NEW PLANTS.

THEIR PORTRAITS AND BIOGRAPHIES.



BROAD-FLOWERED PORTLANDIA (*Portlandia platantha*).—*Botanical Magazine*, t. 4534.—The genus *Portlandia* was named by Patrick Browne, an Irish botanist of the last century, in honour of the then Duchess of Portland,

a distinguished patron of botany and gardening. It belongs to the Natural Order of *Cinchonads* (Cinchonaceæ), which, until recently, held but an inferior degree as a section of Madderworts (Rubiaceæ), although it is the most extensive, and one of the most important, of all the Natural Orders of plants of which we have knowledge. It includes a large number of plants of the greatest benefit to man, not only in the countries they inhabit, but to the world at large, as medicinal agents, acting as tonics, febrifuges, emetics, and purgatives.

The bark of *Portlandia hexandra*, a tree in French Guiana, is nearly as potent against fevers as that of *Cinchona*, the Peruvian Bark of Commerce; and that of *Portlandia grandiflora* possesses the same properties, but in a less powerful degree. The *Coffee-tree* is also a Cinchonad; nor are plants of surpassing beauty deficient in the order, for it includes *Portlandias*, *Ixoras*, *Gardenias*, *Bouvardias*, *Rondeletias*, *Magnettias*, *Luculias*, and many others; and all of them may be known at first sight by their stipules and opposite entire leaves. The usual place for stipules is immediately under the leaf, as in the *Pelargonium*; but in all Cinchonads the stipule is above the leaf, or is interpetiolar, as botanists say. *Portlandia* has five stamens, and one stigma in each flower, by which it is referred to the first order of the fifth class in the system of Linnæus, *Pentandria Monogynia*. As they inhabit the hottest parts of the tropics, like the majority of their race, *Portlandias* require the stimulus of a moist hot stove until their season's growth is finished, but a long repose in a cooler and more dry atmosphere in winter is essential to cause them to flower with freedom.

Portlandia platantha was received in 1850, from the West Indies, by Messrs. Lucombe and Co., of Exeter. It is an evergreen stove shrub, about twenty inches high, and which continues to produce its bold white blossoms all the summer. *Leaves* opposite, almost stalkless, pointed oval, leathery, deep glossy green. *Stipules* broadly triangular. *Flowers* funnel-shaped, five-ribbed, with short stalks, and limb of corolla in four spreading spear-head divisions. It is easily propagated by cuttings, and thrives in a soil of equal parts sandy loam and leaf-mould.



SPOTTED-FLOWERED LADIES' SLIPPER (*Cypripedium guttatum*).—*Gardeners' Magazine of Botany*, ii. 68.—This is a welcome addition to our hardy terrestrial orchids, requiring the same kind of treatment as the North American species, such as *C. pubescens* and *specabilis*, and though neither new to science nor to the gardening world, it is a fit subject for record among our biographies of new or rare plants; for rare we hold it to be, notwithstanding that it was introduced into this country in 1828, and we believe soon disappeared through some defect in the management. Let us now express a hope, however, that as our knowledge of the

various requirements of air plants has been crowned with the most perfect success, our gardeners will give a share of their acquired experience to the cultivation of such beautiful plants as even the genus *Cypripedium* can now furnish.

The subject before us is a native of swamps or boggy places in Siberia, where its roots are held in high estimation, medicinally, against epilepsy, as those of various species of *Orchis* are in Europe, and of *Eulophia* in India, for making the nutritious substance called *Salep*, or *Saloop*. It was figured and described more than a century ago (1739) at St. Petersburg, in a work on the plants peculiar to the Russian provinces. M. Van Houtte, a nurseryman at Ghent, was fortunate enough to flower it last season, when it was again brought under the notice of collectors of rarities, by a good figure and full description in a Belgian periodical (*Flore des Serres*).

Cypripedium guttatum has stems of about six inches high, each stem bearing a pair of acutely-oval stem-clasping leaves, and crowned with one flower, which is white and beautifully blotched with rosy-purple.

The genus *Cypripedium* was named by Linnæus, and is derived from *Kypris*, an ancient name of Venus, and *podion*, a slipper, in allusion to the shape of the labellum or lip—the nectary of former botanists. "In the centre of the flower is situated the large hollow nectarium, almost as large as a bird's egg, shaped like a wooden shoe."—(Miller.) *Cypripedium* forms a section of the order of orchids (Orchidaceæ), to which section nine or ten other genera are referred, but about which very little is yet known. This section is distinguished by having the two side stamens with fertile anthers, or pollen bags, and the middle one barren; the very opposite of the arrangement of all other orchids whatever. The middle stamen in them being the antheriferous one; besides, we have a free distinct style in *Cypripedium*, but consolidated with the stamens, or their embryos in the rest of the order; hence, the origin of the reason why orchids have been called monandrous, or one stamened, by Linnæan students; whereas they are only so apparently, or by defect. Low herbaceous plants like this, from high northern latitudes, are not influenced by frost, or sudden changes of the atmosphere, as similar plants are in more temperate climes, because of the great depth of snow over them; hence the reason why they require the protection of a frame if they are grown in pots in this country; and, we believe, that a bed of them, and of similar plants, ought to have a deep covering of dry mould heaped over it as soon as the leaves perish, and the covering so shaped as to throw off the wet.

B. J.

THE FRUIT-GARDEN.

VINES IN-DOORS.—It is now high time to offer some remarks applicable to vines in various stages of their growth; for, at this period, it may be presumed that some have fruit ripening, others are in the swelling-off state, and the late or winter grapes should now be in course of disbudding. Those on the eve of ripening require a much drier atmosphere, and the slower they ripen, the better will be both their colour and flavour. The vine can only prepare accretive matter according to its extent of leaf surface, and the amount of light; that is, granting that the root action is sound, and that heat enough is secured to keep up the reciprocation between root and leaf, and a lively circulation of the fluids in the latter. This point will, probably, be better attained by a temperature averaging but little over 60°, than by a higher one, admitting, however, an advance of 10° or 12° during sunshine. Abundance of air should be given in the day, and, if consistent with the other inmates of the structure, by all means a trifling

egress at back all night. It now becomes good policy to look carefully over the vines, in order to ascertain if any of the later made spray is obstructing the light from the earlier and larger leaves; such should be removed, or pinched back, just as much as obstructs the light from the leaves in question, and no more. Be it remembered, that irrespective of the other inmates of the house, the more foliage is exposed freely to the light, the better; but it is always esteemed good practice to check the growing principle during the ripening period; it being understood, that mere elongation of the shoots after colouring has commenced, but tends to decoy the ascending sap from the best and oldest foliage; the vessels of which should be kept distended with fresh supplies, which, by the aid of their elaborative power, speedily become accretive matter, capable of enhancing both size and quality in the future wood and the fruit. Let no beginner suppose that it is necessary to throw sunlight on the very berries themselves; this is a most fallacious and fatal idea, and has often seriously injured a ripening crop, both as to size and flavour. Those who have early grapes with their roots principally outside, will (if they have had the surface covered) have, perhaps, removed it before now. If they have not, we think they will do well in taking advantage of the first warm period to do so; and, as it is a somewhat sudden change, if the material has been in a fermenting state, some caution must be exercised, or the surface fibres, which are almost sure to be called into being by the warm and manurial applications, will speedily suffer through the atmospheric vicissitudes which are sure to occur. People commonly throw a little loose litter over the surface, but this is rather a doubtful procedure. We never tried it; but it seems likely that some three inches of a charred material would be beneficial. This would, by its mere colour, absorb and retain sunbeats.

GREENHOUSE, OR SUCCESSION VINERY.—The end of April, and beginning of May, is a somewhat puzzling period to those who cultivate pot plants beneath their vines, especially if an anxiety exists to get the grapes ripe tolerably early. The first consequence is, that the plants beneath become "drawn," and lose that sturdy and consistent habit which is the pride of all cultivators to obtain. This arises from the disproportion the amount of light bears to that of the heat; the light having been less and less ever since the grapes began to unfold their foliage, whilst the heat has been in nearly a corresponding ratio in the ascending scale. All such houses should have an adjunct in the shape of a pit or two, which might be usefully employed in winter, in protecting bedding plants, or in forwarding asparagus, sea-kale, or mushrooms. These pits should be at liberty in the early part of April in each year; and, at least, half of the hardier of the inmates of the greenhouse should be placed in them, on a bed of coal ashes. Thus, the remainder being placed so thin that no two plants touched, the latter practice being indispensable, the plants retained may be grown in tolerable perfection, by a judicious mode of applying heat, accompanied, night and day, by a circulation of air. By a judicious mode of applying heat, we mean an adherence to the lowest amount of *night heat*, consistent with the safety of the grapes, which, when brought up *hardy*, will endure—we had almost said enjoy—a much lower temperature than people commonly imagine. This is obvious, when we consider that out-door grapes *must* very frequently be subject to a temperature near freezing, in the course of the month of May; whilst the average night temperature of that month cannot be much above 50°.

Let it be borne in mind, however, that they are brought up hardy from the first; the cold winds rocking their cradle, and, perchance, invested in a snowy mantle at times. Abundance of air, then, from *the first*, should be the maxim, especially from seven in the morning to

three in the afternoon, when we would cause the temperature to rise to 70° or 75° for three or four hours daily; still adhering to the maxim of encouraging motion in the air by a little ventilation.

Houses intended for this purpose should, if rafters are used, have a greater width than ordinary *between the rafters*—say five feet apart. This, with the vines rigidly confined to the spur system, would be found to carry out the culture of vines with pot plants in a most satisfactory way.

SUCCESSION VINES now, perhaps, undergoing the first swelling of the berry, must have much attention paid them in regard of stopping, disbudding, &c. With regard to the latter, those who have hard worked vines will, perhaps, think advice on this head superfluous; but the practice has a wide bearing. Much depends on the age and energies of the vines. Those quite "at home" in a good border, and possessing a vigorous root-action, will perform wonders; and hence the marvellous discrepancy in reports of vine culture. One cultivator can perfect, both as regards flavour and colour, some twenty or thirty pounds of grapes from each rafter; whilst another, who has attempted the same, has never been able to satisfy himself. A healthy and *vigorous* action of the roots of vines (permanent, we mean), is the cause of energy; that energy is productive of power, whether to produce wood or fruit; which power, well directed, tends to the production of a fine crop of grapes. Now, as no man of sense would attempt to spur a donkey against an Arabian, so no good cultivator of the vine would goad on every vine alike. A good gardener, in going to a new situation where several vineries existed, would not inquire and examine how the vines had been pruned or trained, alone; he would scarcely sleep sound until he had experimented on the borders, in order to test their depth, their dryness, and their mechanical structure; and by this, in the main, would a modern Abercrombie shape his future course.

We have before us some copies of *The Cincinnati Horticultural Review, U.S.*, a transatlantic periodical, which might have been fairly entitled the "great western." We need not tell our readers that the Cincinnati summers are regular scorers; no mincing there. Now, although these periodicals do not abound in material of pointed interest to the old world; yet it is really edifying, to observe the importance that these go-a-head brethren of ours attach to thorough drainage, sound subsoils, and those other first principles which John Bull might fancy he had a monopoly of. If, then, with a roasting sand in the climate of Cincinnati, sound soils and subsoils are deemed of paramount consideration, how much more so in our northern clime; and yet, because through more adventitious matters, a vinery here and there succeeds with little trouble, one portion of the gardening public indulge in a kind of horticultural slumber as to taking the necessary precautions.

LATE, OR WINTER AND SPRING GRAPES, should now be almost, or quite, in blossom; for if much later they will not keep so well. The object is to get them well coloured before the dullness of autumn sets in; say by the middle or end of September.

What the newly advertised *Black Barbarossa* may prove to be remains to be shown; but, if superior to the *West's St. Peter's*, it must be an astonishing kind; for the latter is the surest bearer, the best coloured, and the soundest keeper of any grape heretofore known. This grape both requires and deserves a somewhat high temperature, and will, in winter, bear a vast amount of heat without shrivelling. We have heard a first-rate cultivator affirm, that it is fitter to combine with the Muscat's than the Hambro's for late work. R. ERRINGTON.

THE FLOWER-GARDEN.

COMPANION TO THE CALENDAR FOR MAY.—ARREARS.—

If any seeds were neglected to be sown during the last two months, this is a good time to get them in without delay. All flower-garden seeds, whether they be of annuals, biennials, or perennials, also tree seeds, and those of bulbs, may be sown in the open ground, or in close pits, during the first ten days of May. Although some of the kinds may be too late, they will now give less trouble, and be more free from accidents than those sown in the previous six weeks. At any rate, it must be some consolation to know that it is not yet too late to sow seeds.

COMMON BORDER ANEMONES AND ANTIRRHINUMS sown now, or before the middle of the month, will flower next autumn, and so will all the best of the *Penstemons*, and many other things.

AURICULAS AND POLYANTHUSES, not as florists' flowers, but as in our school-boy days, are not half so much cultivated as they ought to be; and the reason appears to be that they stand in the way of the summer plants when they are not in flower; but that need not hinder any one from using them. Here we grow them by the thousands, and they are never in the way. We have many whole beds of them in fine bloom now; and in rows, what can be gayer than a good mixed collection of them? As soon as they are out of flower, no one sees more of them till next February or March; they are removed and planted in beds in the reserve ground, where they give very little trouble, after the first few waterings, till the flower-beds are made up in the spring, when they are taken back to bloom once more. They are not the only spring plants that can be managed after this fashion without in the least suffering, if ordinary care is taken of them.

WALLFLOWERS we serve the same way. They are about to be sown now, and in June the plants will be set out in rows wherever room and good soil offer a chance, and next February will be time enough to remove them to the flower-garden, and the moment they are out of flower, out with the plant also, for they rob the ground as bad as any crop cultivated.

SWEET WILLIAMS are as plentiful in gay varieties as the "Walls;" and it occurred to me this moment, for the first time, that if some of the old plants, or stools, as some call old plants, were taken up before the middle of May, the tops cut off and the roots divided, as we do with *Campanulas*, *Coreopsis*, *Rudbeckias*, and many others, to get them to flower later, or prolong their flowering season, they would yield that way as well as the *Pansies* I lately told of. I am convinced that many more "herbaceous plants" of the old school will come on the stage again, when we find out the proper time and right way of subduing them to cultivation, so as to pay for their keep. For after all that has been said in favour of growing such plants after the manner of botanic collections, I cannot reconcile myself to the idea of letting them pass without subjecting them to the rules of good gardening; at all events, I would have people experiment on every flower they admire or possess, and surely we shall some day be able to write out a list of border and bed plants that require no artificial heat to bring them forward.

BEDDING PLANTS.—Nine persons out of every ten who get into conversation with a gardener, and nine-tenths of gardeners themselves, when they meet, or are writing to one another, are as certain to wind up the subject with "bedding plants," as that two and two make four. One could write a large book on bedding plants alone, and some of those who read it would be as sure to write to the author next week, if he allowed it, for the very information they had just been reading, as that four and four make eight. Whatever kind of weather we are to have for the month of May, it is certain the earth's

surface has not been less cooled by the winter for a long period, and, therefore, is more fit for the reception of half-hardy plants than usual, so that ten days or a fortnight may be gained this year on the time of setting or planting out bedding plants. Some gardeners and amateurs turn out their bedding plants, late in the spring, into shaded places away from the sun, with the laudable intention of rendering them more hardy to stand out in the full sun by and by. But there never was a greater mistake in this world, unless it was the notion prevalent in the highlands of Scotland, at and previous to the beginning of the present century, that bathing infants in cold water would bring up a race of more hardy men for the military regiments of the country. Here I am obliged to harden off part of our stock in places where the sun cannot reach them so much as I could wish, and the youngest lad in the garden is aware of the difference between such plants as are hardened full in the sun, and those in the shade of walls or fences, in respect to their power of withstanding the sun when they are planted in the beds.

BULBOUS PLANTS, as hyacinths, tulips, &c., require as much care after the bloom is over as when they were rising up for flowering, because they need the perfect ripening of their leaves to enable them to blow next year; therefore, those who cut the leaves of any kind of bulb in a green state, for the sake of tidiness, are working against nature; tying such leaves up in neat bundles to keep them from shading other things near them, is just as bad a practice as cutting them off, because the light is kept from them that way, and they cannot digest their food in the absence of light.

HERBACEOUS PLANTS in mixed borders are as susceptible of high cultivation as the best and newest bedding plant. One essential part of their management at this season, is to see that the shoots of such as throw up many of them, as, for instance, the phloxes, are not allowed to be too numerous. Mr. Barnes and Mr. Errington insist on their raspberry bushes being thinned to so many canes per stool, in order to get more and better fruit from what is left. In the flower garden every plant of similar habit ought to be as carefully thinned as the best raspberry that was ever heard of.

PERENNIALS PROPAGATE BY SLIPS AND CUTTINGS.—That is, herbaceous plants, and the difference between slips and cuttings is, that slips are side pieces of any plant drawn out, or cut out, with a few roots to them. There are scores of border plants that can be increased in May from these slips, without at all injuring the mother plants. All they require is to be planted in some light soil, in a shaded place, away from the sun, and to be watered from time to time as the weather tells; cuttings of such border plants as are scarce should have a hand-glass placed over them on a shady border, as, without it, the dry winds would be apt to wither them, now that they are as fresh and succulent as hothouse plants.

ROSES.—Try the effect of clear liquid manure on the fly; and to prove that it is not too strong for the young leaves, first pour some of it over nettles, or some other green weeds full in the sun, and if it is too strong it will scorch them in twenty minutes in the middle of a hot day; add more pond water to it and try again, and when you have it so reduced that soft leaves do not mind it, pour it with all your might against the roses from a garden-syringe, or hand-engine, any time in the day; but, perhaps, the evening is the best time, as the plants will be wet all night, and the bad smell will stifle the creatures. I have found the plan most useful, and I have great faith in it.

CAPSICUM FUMIGATION.—The most extraordinary discovery for killing insects, since that of scalding them in the winter by hot water at the temperature of 130° to 160°, is that detailed by one of our correspondents lately, who used the fumes of burnt *Capsicums*. We have proved

this scheme here to our perfect satisfaction, and no plant subjected to the ordeal seems to be the least hurt by it. Some years since, I used to make Cayenne pepper for the use of a family by grinding Chilies, or Chili Capsicum, of our own growth, as, according to the *Lancet*, nothing of that sort can be had genuine otherwise; and having contracted a relish for the article before curry powder was recommended for cold stomachs, I contrived to have some genuine Cayenne always in the house, and having no Capsicums when the receipt appeared in our pages, I used the powder of Capsicum or Cayenne instead, first putting a small dose under a bell-glass with three little tops of rose shoots covered with green flies, but their greenness was soon over. A damp hothouse charged with this stuff, and shut quite close, is enough to kill a Turk or a Cossack, let alone flies; and I would advise every one who grows plants, to grow abundance of the common large Capsicums this season; dry them well when they are ripe, pass them through a coffee mill, and bag for future use, instead of the nasty tobacco, which makes one's hair stand on end to think of it.

SEEDLINGS THIN.—Sow thickly and thin in time, is one of the golden rules in our line; and, of all the months in the year, May is the real time to thin seedlings, and you should never thin anything that is choice in dry weather, because then the thinnings cannot well be transplanted, and, also, the disturbing the surface of a row or bed of seedlings might cause more harm than good. If dry weather prevails, and seedlings get too much crowded, first water the bed well with a rose pot, and, after thinning, water again, but more slightly, to settle down the surface between the plants. Begin to water anything which you think must needs be watered in dry weather before the ground gets quite dry; to put off watering as long as one can, and then to be obliged to do it at last, often does more harm than good, by causing young sucking roots to be formed quite near the surface, which cannot stand two days without being hand-fed, and if the plants have got into the habit of trusting to such surface-roots for their principal nourishment, away they go, also, under a sudden drought, and you see no more of them.

DOUBLE VIOLETS.—Be sure and have a fresh supply of them, before the month is out, from cuttings or runners, or by dividing old plants, and taking the outside or younger pieces, as either of these methods will answer. A kind gentleman, in the west of England, sent me a most extraordinary flower of a violet the other day; it was a *lusus naturæ*, as he called it; that is, a freak of nature—a monster like a calf's snout, or Antirrhinum flower, as nearly as could be.

From the tenth to the twentieth of May is the right time to sow in the open ground a large bed of CHINA ASTERS, to flower in the autumn, after being transplanted two or three times, and of all plants they are the easiest to remove from place to place, up to the very time they are in full bloom, so that, independently of their use in mixed beds or borders, they come in very handy towards the end of August, to fill up whole beds that are getting seedy by that time in most gardens. *Viscaria oculata*, one of the very best of our hardy annuals, is just as accommodating as the Asters, and may be transplanted when it is in full bloom; if you sow it any day in May, after the fourteenth, transplant it twice or three times, in any out of the way place, it will come in for use for the flower-beds or borders, from the middle of August till the frost comes. *Lobelia ramosa* is another most lovely blue flower, that may be treated in all respects as the Viscaria and the Asters, only that it is safest to sow it under a frame or a hand-glass, as the seeds are so small that a heavy shower might wash them down too deep, or out of the ground. A bed of the Swan River Daisy (*Brachycome*) sown in March, will generally get shabby early in September, but a reserve lot of this

Lobelia comes in at once to fill up the bed next day, and be in full bloom too. A bed of mixed *Brachycome* answers remarkably well, and gives one an idea of a bed of *Cinerarias*.
D. BEATON.

THE ROSARY.

SUPPORTING TREE ROSES.—There is no accounting for tastes; and so long as Tree Roses are fashionable, gardeners must continue to grow them, and look after them. In a great many places they are stuck and dotted about lawns and the sides of walks in the most approved mop-and-handle fashion; constituting, unless for the short time they are in bloom, objects of ugliness rather than beauty. Even when in bloom, they are only stilted things at best, with heads little more than a foot in diameter. In our opinion, Tree Roses are only objects of beauty and in harmony, in a dressed lawn or flower-garden. First, when the heads assume a conical appearance, and are at least from three to six feet in diameter, masses of bloom, rather than individual fine flowers, being aimed at; secondly, when Roses of a drooping character, and with flexible shoots, are chosen, bedded high, and allowed to droop umbrella fashion, but not stiffly, to the ground; or, thirdly, when arranged in groups, the tallest in the centre, and mixed with, or, at least, having taller and lower dwarfs for the circumference. The effect in any one of these cases is very different, from seeing a number of whip-handle-like briars, with small heads of Roses, studded here and there without order or method. For any, or all these modes of using Tree Roses, they will require, until they are very strong, if not always, to be securely supported. Almost every mode of doing this by wooden stakes, surmounted with a rim to tie the shoots to, is insecure, troublesome, and rather unpleasant in its appearance. Having strong winds to contend with, and, at one time, a goodly number of Tree Roses, I used round iron rods, tapering from an inch and more at the base, to half an inch and less in diameter at the top. These rods were of different lengths, generally from three to six feet. From the base of the rod, three horns, at an equal distance from each other, proceeded horizontally for a foot or fifteen inches, and then, from each of these, *tines*, bent perpendicularly into the soil to the depth of fifteen or eighteen inches. The rods were securely fastened before the Rose was planted. The tines and the cross horizontal pieces being under the soil, and the space between them firmly packed, there could be no danger from wind, so long as the heads of the plant were small; nor yet in any case in sheltered places. To secure them still further, however, and allow for large massive heads, the upper end of the rod or stake, for a couple of inches, was made square, the point being about the quarter of an inch, and widening backwards. A frame was made to fit this square part by welding two rods of iron, or of strong wire, three-eighths of an inch in diameter, at right angles with each other, beating them flat at the point of juncture, and piercing there with a square hole, to fit the top of the stake. The length of the rods will give you the diameter of the frame. From two to four feet will be a good size, unless you wish for a regular drooping umbrella, when it may be nearly as much more. The rods should be bent downwards from the middle, to give it a slightly circular appearance. A strong wire should go round the outside, and be fastened to the four points of the principal rods with small wire. Finer wire than that round the outside may be placed in circles at six inches apart from each other, and here, too, fastened to the main rods. A tap with a hammer fixes your frame on the top of the stake; and when you wish to move it, for the purpose of exchanging it or otherwise, a tap with a hammer upwards, after untying

your plant, will set it free. Even this, however, in very windy places, I found insufficient to prevent large massive heads from being swayed and loosened at the roots; I resorted, therefore, to an additional means of security, which looked very neat. Opposite the four points of the two main rods of the frame, stakes were driven into the ground, the end merely being visible, and then a wire connected the top of the stick, and the end of the rod of the frame; and thus anchored, it required a hurricane to break them in the least from their moorings. These four connecting wires, as well as the rods and frame, were painted. Along these wires connecting the ground with the frame, strong shoots of Roses might be trained; and failing that, they look very interesting with small creepers, such as *Maurandya*, *Tropæolum*, and the smaller *Lophospermum* running along them. I forget the exact price, but the rods and frames were made very reasonably, to order, by Mr. England, of Hertford.

R. FISH.

GREENHOUSE AND WINDOW GARDENING.

THE CORAL PLANT (*Erythrina crista-galli*).—This, though once a universal favourite, is now comparatively seldom seen. We run so much after novelties, that, for the sake of giving them room, we discard first one and then another of our old-established favourites. When, now and then, a large plant, with luxuriant green foliage, and with from six to as many more of strong shoots, each terminated with spikes of large scarlet pea-blossomed flowers, appears on the exhibition table of a floricultural society, every eye is arrested, and, among young amateurs, especially, it is no uncommon thing to hear enquiries, thick and thickening, as to how it is to be managed? Where it is to be had? Whether they can grow it without a plant-stove? &c. There are few plants that are more accommodating, as it may be treated successfully as an early-flowering stove-plant, as a later-flowering greenhouse plant, and as a plant for a conservative wall, and a group in the flower-garden, if managed with a little more care than is requisite for fuschias. Few things could be more elegant, during the summer months, against the walls of our pretty cottages; and for this purpose it merely requires to be planted in sandy peat and fibry loam, with hard knots of dried cow-dung, and the situation well drained, to receive manure waterings several times in summer, be cut down like a fuschia at the approach of winter, and frost and wet excluded by mulching with dry litter, and covering with an excluder of wet; and then, at the present season, after removing the litter, protecting the young shoots until June with an evergreen branch or two in the front of them.

In the flower-garden the plants may be protected in a similar way; but a better plan is to take them up at the end of autumn, and either potting them, or packing them in boxes of earth under the stage in the greenhouse, or any other safe, unobtrusive place, keeping them dry during the winter, watering and encouraging growth in spring, and then turning them out, when all danger from frost is over. I have not had them in the flower-garden lately, but I hope to have a stock to try them another season, as beautiful, though they be in pots. A person who has never seen them against a wall, or in a favourable situation in a flower-garden, can form but little idea of the richness of the colour of the flower, the time it remains in bloom, and the luxuriance of the foliage. I may premise here, that for whatever purpose the plants be used, young plants can seldom be made to do anything like the work of those several years old. In purchasing, therefore, there is no comparison between getting an old root and a young plant

raised from a cutting of the current season. With the latter, you must be content with a single stem and a single spike for the present. With these general observations, I shall now confine myself to a few remarks as to their treatment for the greenhouse, merely stating, in passing, that the mode of propagating, resting, or wintering, is alike applicable to whatever use the plant may be applied.

The family name is derived from *erythros*, red, as most of the species have scarlet flowers. A great portion of these I have not seen; but I believe the one placed at the head of this article is about the most beautiful. In Brazil it grows into a low evergreen tree. Here we find it most economical to treat it as a sub-shrubby herbaceous plant, with fleshy underground stems or roots. After keeping the plants in the greenhouse in winter, if placed in a hotbed in March, and gradually hardened off, the plants will bloom in May and June. If grown in the greenhouse, and kept pretty close when beginning to spring, they will bloom in June and July. By starting them just as you would a dahlia, in a plant-stove in winter, they will bloom early in spring. By allowing the shoots to ripen after they have done flowering, by withholding water to a certain extent, and giving full light and air, then cutting the plant down, resting it for a month or six weeks in a cool place, and starting again in heat, you may have a second flowering, from the same plant, in the autumn. This system is not, however, to be encouraged, as, like taking two crops of grapes from the same vines in one season, it weakens the plants. Where successions are desirable, it is best to have different sets of plants for the purpose, setting them growing at different times. For this purpose, another species, or, as some think, merely a variety of *crista-galli*, is very useful—I mean *Curvifolia*. This, treated in the same way, has larger, more succulent stems, larger and deeper green foliage; if anything, larger flowers, but the colour is a much duller crimson. This *curvifolia*, without very great attention, can hardly be successfully flowered until the early autumn months; and hence, when grown in pots, though not so brilliantly coloured, it comes in as a succession to *crista-galli*.

General Management: Growing Period.—I have already stated that much cannot be done this season with a small young plant. It should be treated as a child of hope, and should never know what it is to be checked or stand still. As soon, therefore, as it requires potting a-fresh, give it such a shift as will serve it for the season, and never let it stand still for want of a supply from the manure-water pail. The stronger it grows, and the finer the foliage, other things being equal, the stronger will be the crown or underground stem, and, consequently, the more numerous and strong will be your shoots next season. But, supposing that you have a good old plant, which has been kept under the stage of the greenhouse during the winter, and somewhat dry, now it will be showing young shoots from its crown, on the base of the last year's shoots. When these are from one to two inches in length, it is a good time for taking the old plant to the potting bench, depriving it of the most of its old soil, but preserving any fresh good roots. As similar treatment is required each season, it is best to put the plant at once into the pot in which it is to flower, as thus all checks are avoided. Unless great care is exercised on the successive shift-system, you run a risk of getting small dumpy flower-spikes as the reward for the additional labour. To flower a good specimen, the pot should be from eight to sixteen inches in diameter. Drainage here, as well as in all general pot culture, must be well attended to. The soil I have found most suitable, is one and a half part fibry peat, one part fibry loam, one part of equal proportions of dried cow-dung and leaf-mould, and half a part of equal proportions of coarse

noduled charcoal and silver sand. After carefully potting, if you could plunge the pot in a hotbed commanding a bottom heat of 80° , and a top temperature of 50° to 55° , your roots will be produced more freely, and the shoots will come stronger and bloom earlier. Failing these conveniences, the next best method is to put a handlight over the pot in the greenhouse, to keep it close and warm for a month; and failing even this, the plant should be kept rather close and shaded for a couple of weeks, and even then you must not expect to see the bloom so early. After growth has fairly commenced, the next thing to do is to regulate the shoots. If you have a good old stool, you will have many more of these than the plant can properly support. From three to six will be enough for an eight-inch pot, and so on, in proportion to the size of the plant. A few fine spikes are always more interesting than a mass of pigmy ones. Thin out the shoots, so as to leave those of an equal strength of growth; if any difference must be, retain a strong one for the centre. This should be done when the shoots are two or three inches in length; but do not throw the thinning away—we shall advert to them presently. If grown in the greenhouse, give them all the light and heat you can consistently with the welfare of your other plants, and, above all, be particular in *watering*. One thorough drying will give you the chance of small spikes of bloom, or the yellowing, or losing the lower leaves, the presence and luxuriant green of which set off the flowers to the best advantage. A saucer may, therefore, be used below the pot, provided the water does not stand in it at any time above the quarter of an inch. Manure-waterings from cow-dung and a little soot, not strong, may be given alternately with clear water. As the shoots get longer, more air must be given, so that the plants have plenty of light and air too, before the time the bloom expands.

Propagating.—There are various ways of doing this. First, by cutting the young shoots into pieces of at least two joints in length, and inserting them, after drying their base, into sandy soil, under a hand-light, in a gentle heat. Secondly, by cutting down the old stems when nearly ripe, after flowering, cutting them into pieces each containing a separate bud, placing them firmly in pots as thick nearly as they would stand, covering with half an inch of soil, and placing in a hotbed, with a temperature of from 70° to 80° , just as is done with vine eyes. But the best mode of increasing the stock, is by means of the thinned-out young shoots we referred to above. These, cut over at the base with a sharp knife, and the cut part dried by exposure for twenty-four hours, while the top part is kept green by moisture and shading, will root freely in a sandy soil under a hand light, with a bottom heat of from 65° to 75° , and when rooted should be potted off and encouraged; the sooner they are potted the better will they succeed.

Resting.—After flowering, and when the stems are ripened, cut down the plants; let them be kept dry but not baked dry, or the juices of the underground stems will be exhausted. Instead of watering them in winter, a safer plan is to pack the pots in and cover them over with moss, in any place where frost will not get at them, and thus the roots are maintained in the happy medium of being neither wet nor dry.

Insects.—The *Green Fly* sometimes attempts a nibble at the points of the shoots, but he is easily dislodged with a puff of tobacco. The *Red Spider* is a more troublesome enemy, and soon takes the gloss out of the finest foliage. If once he gets hold, farewell to the interest of your plant for that season. The syringe freely used, and sulphur steamed from a hot-water plate, will soon cause him to flit, and the use of these frequently will always act as a preventive, by keeping him at a respectable distance. Now and then, I have

seen the thrip try them for a meal, and he is a troublesome customer to get rid of. He does not relish any of the above modes of treatment; but the most effectual starter I have found, is dashing the leaves with a weak infusion of bruised laurel leaves, made the same way as our good ladies brew their tea; but mind that it be weak and fresh.

R. FISH.

HOTHOUSE DEPARTMENT.

EXOTIC STOVE PLANTS.

BEGONIA.—This is a genus of plants remarkable for their oblique or unequal-sided leaves; they are at all times of the year more or less in flower, and their flowers are generally showy and pleasing. Our good friend, Mr. Fish, has already, in *THE COTTAGE GARDENER*, written very ably on them as greenhouse plants, and we agree with him, that in summer they may be grown in that department; yet there are so many plants whose proper place is in the greenhouse, and also more appropriate to it, and considering that most of the Begonias are essentially inhabitants of the stove, where they flourish with far greater luxuriance and beauty, we think Mr. Fish will agree with us in placing them there as in their proper place, indispensably in winter. We shall, therefore, in this paper cull a few of the very best species, and recommend them to our stove-plant growing readers as desirable plants for that house.

BEGONIA ALBA COCCINEA (White and Scarlet B.); East Indies.—One of the most beautiful of the whole family; even the leaves alone render the plant ornamental, they are nearly round, bright green on the upper side and reddish underneath. The flowers are produced on upright branched panicles very numerous; they are scarlet before they open, and pure white inside when expanded. The height they attain is seldom more than one foot, this renders them useful for the front rank of the stage or pit. A very ornamental species. 3s. 6d.

B. ARGYROSTIGMA (Silver-spotted B.); Brazil.—The leaves of this species are its greatest ornament; they are large, and spotted all over with distinct pure white spots. The flowers are produced on close cymes or bunches, towards the upper part of the stems, from the axils of the leaves; they are white and pretty. 2s. 6d.

B. CINNABARINA (Vermilion-coloured B.); Bolivia.—This fine species was introduced by Mr. Clarke, and presented by that gentleman to the Messrs. Henderson, of Pine-Apple-place; in their stove it flowered for the first time in 1848. It is a stove bulbous plant; coming from a temperate clime it was thought, at first, the greenhouse would be its proper abode, but experience proves that in that situation the bulbs perish in winter. The foliage is large, of a silvery grey green, tinged with red at the edges. The flower-stems spring from the axils of the leaves, in a large, open, rather drooping panicle. The flowers are large, of a bright orange scarlet colour. The flower-stems are almost transparent, and of a rich crimson colour. It is a fine species, deserving every care and attention. 5s.

B. COCCINEA (Scarlet B.); Brazil.—Though not so dazzling in colour, nor with such large flowers as the preceding, this is a very elegant species. The foliage is handsome, and the flowers are of a bright scarlet colour, produced on short racemes from the axils of the leaves, towards the extremities of the shoots, hence they must not be cut in nor stopped till after the bloom is over in June. 2s. 6d.

B. DREGEI (Mr. Drege's B.); Cape of Good Hope.—A dwarf-growing, very leafy bush, producing abundance of neat heads of pure white flowers. Very useful for cutting for bouquets. 2s. 6d.

B. FUCHSIOIDES (Fuchsia-like B.); New Grenada.—An upright-growing plant, with, when well grown, nume-

rous drooping panicles of scarlet flowers, something like the flowers of the fuchsia, hence its distinctive name. We saw, last autumn, some plants of this fine species in the Royal Gardens, at Frogmore, that were four feet high, and loaded with their bunches of bright-coloured flowers. They were grown in 10-inch pots, in light rich soil, in a kind of intermediate house, well exposed to the light, but at some distance from the glass. We also saw, about the same time, some fine specimens, six feet high, in the front of the palm house, at Sion House. Both examples proved that this plant can be grown so as to flower freely, which it does not always with ordinary management; yet it is worthy of every attention to cause it to flower well, because, in the first place, it is a very ornamental object when in bloom, and, secondly, it flowers in the last month of the year, when bloom is most acceptable. 2s. 6d.

B. HYDROCOTYLEFOLIA (Hydrocotyle-leaved B.); South America.—It is mentioned above that *B. alba coccinea* is a low growing species, but there is one still lower that will do to stand in the very front rank, even before that species. The leaves seldom reach more than three inches in height, and the flower-stems six inches. The leaves are nearly round, about an inch and a half across, very thick and leathery, and when the plant is a year or so old they completely cover the pot. The flower-stems spring up from amongst the leaves pretty numerous. The flowers are of a pinkish white, and are neat and pretty. It is a desirable, useful little plant, and will grow well in a fancy basket hung up in the stove. 3s. 6d.

B. INSIGNIS (Striking B.); South America.—A large plant of this species is, as its name imports, a striking object. It is an upright, somewhat straggling, evergreen, fleshy-stalked, shrub. The foliage is moderate in size, of a pleasing green, and deeply serrated, or toothed at the edges. The flowers are produced on long drooping racemes very freely, and are of a pleasing pink or pale rose colour, cheering our stoves during the most dreary months in the year, namely, December and January. A showy, desirable species. 3s. 6d.

B. LUXURIANS (Luxuriant B.); South America.—This fine, lately-introduced species, widely departs in its foliage from the general habit of Begonias. It is a tall growing plant, reaching the height of from four feet to five feet. Both the stem of the plant, and the stalk of each leaf is of a pleasing reddish pink colour. The leaves are five-parted, something like the fingers of a man's hand, giving the plant a palm-like appearance. The flowers appear from the axils of the leaves near the tops of the branches. They are numerous disposed in close cymes, or bunches, and are of a pleasing bluish white colour. We saw it well-bloomed this spring in Mr. Salter's Versailles Nursery, at Hammersmith. A showy, handsome species. 5s.

B. MARTIANA (Martin's B.); Brazil.—A tuberous-rooted species, with tall, slender stems, producing their large rose-coloured flowers for a long season in summer. Very showy. 3s. 6d.

B. MANICATA (Collared B.); Brazil.—Though the flowers of this species are individually small and insignificant, yet, on a large plant, they are so numerous as to render it, when in flower, very ornamental. The leaves are large and handsome. On the under side, near the stem, they have, as it were, a ruffle or collar, finely fringed, and of a beautiful chocolate crimson colour. This adds greatly to their beauty, and is a very curious appendage. The plant itself is of a low stature, seldom reaching one and a half foot high, but the flower stems rise, on a large specimen, to three feet high, and two feet through. It is then a truly fine object. The season of blooming is in March, a season when its flowers are very acceptable. 2s. 6d.

B. NITIDA (Shining-leaved B.); Jamaica.—An old inhabitant of our stoves, being introduced so long since

as 1777. There are few plants more worthy of cultivation. The plants form evergreen shrubs of a somewhat straggling habit, which, by proper training and stopping, may be amended. The leaves are, as the specific name imports, of a bright shining green, and large and handsome. The flowers are produced on longish stems, bearing a large drooping cyme of medium-sized flowers, of a beautiful bright blush pink colour. One of the handsomest of the genus. 3s. 6d.

B. PARVIFOLIA (Small-leaved B.); Cape of Good Hope.—The description of *B. Dregei* applies to this species, only the leaves are, in this case, much smaller. A neat, pretty plant, flowering freely, and useful for cutting to assist in making bouquets. 2s. 6d.

B. RAMENTACEA (Scaly-stemmed B.); Brazil.—A handsome dwarf species, growing about a foot high. The stems of the leaves are covered with whitish scales; they are large, and of a roundish shape; the underside is of a dark crimson colour. The flowers are produced on very-much-branched panicles, and are of a pure white. A pleasing, fine species. 3s. 6d.

B. SANGUINEA (Blood-red-leaved B.); Brazil.—Chiefly remarkable for its leaves being fine coloured on the underside. A straggling evergreen shrub, worth cultivating for its beautiful foliage. 2s. 6d.

B. STIGMOSA (Spotted-leaved B.); South America.—The leaves are thinly covered with large brownish spots. The flowers are white, a dwarf, curious species, worth growing for its curiously-spotted leaves. 3s. 6d.

B. ZEBRINA (Zebra-striped B.); Brazil.—The leaves of this fine species are like glossy green velvet, beautifully barred with pale purple stripes. The flowers are pink coloured. A very showy species. 3s. 6d.

The above seventeen species we consider the best of this large family of plants. Not that there are not several others, which, where there is room to cultivate them, might be added to the selection. If any of our readers are desirous to increase the number, let them consult the *Cottage Gardener's Dictionary*, page 123 and 124. They will there find sixty more species, faithfully, but briefly described. We must defer the culture of these charming plants to this day fortnight.

T. APPLEBY.

FLORISTS' FLOWERS.

AURICULAS and POLYANTHUSES.—Continue to protect late bloomers from heavy rains. Such as are gone quite out of flower should be placed on the east side of a low wall, and sheltered from late frosts. If seed is intended to be saved, keep the plants under hand-lights, propped up with small pots to shelter the seed-pods from wet, which would cause the seed vessels to mould, and rot the seeds; but give the plants a due amount of water at the roots.

CARNATIONS and PICOTEEs shelter from heavy rains, but fully expose in fine weather. The best shelter is formed of hoops and mats. The latter to be thrown over in wet weather, and late frosty nights, should any occur. Water freely in dry weather.

HYACINTHS will now, in the open beds, be in fine bloom. They require shelter from rain and heavy winds, and from bright sunshine. By these precautions the bloom may be prolonged for a fortnight.

HOLLYHOCKS.—Place a mulching of rotten dung round each plant, to keep in the moisture, and to feed the roots by the ammoniacal salts being washed down in showery weather.

TULIPS now in full bloom, shade from bright sun, or the colour will fade quickly.

T. APPLEBY.

THE KITCHEN-GARDEN.

EVERY possible encouragement should now be given to all advancing crops. *Seedling Carrots, Parsnips, Onions, Beets*, and all other drilled crops, should be attended to in the dry part of the day, as soon as the plants make their appearance, by having the bound crust of the soil shallow-raked, and the Dutch hoe passed up in the same way between each row, not leaving an inch of soil unbroken throughout the whole length and breadth; and, as the crop advances, continue to hoe and surface-stir to a greater depth, so as to prevent any appearance of weeds, and at the same time to admit the beneficial influence of the atmosphere to the roots of the plant. If any vacancies occur, lose no time, when a favourable opportunity offers, in transplanting carefully; for not only has an uneven crop a very neglectful appearance, but the loss of space is also a great consideration.

Brocolis, Borecoles, and, indeed, the seed-beds of all the brassica tribe, as well as other seed-beds, should have the bound surface carefully shallow-raked one way, but not when the soil is damp—neither when it is over-dry; but choose that time when the surface will rake without pulling up into cakes or flakes.

Sow again the various varieties of *Brocolis, Coleworts, Cauliflowers, &c.*, as well as of late *Peas* and *Beans*. Protect the *Kidney* and *Dwarf Beans* transplanted from hot-beds, &c. Plant out, in shallow trenches, the *Cardoons* that have been raised in pots. Make another sowing of *Celery*. Transplant young plants, and put out a row or two of the early sown. Where fermenting materials can be spared, *Dwarf Beans* and *Early Celery* may be greatly forwarded by casting out trenches, and filling them with eighteen or twenty inches of the hot material, putting on it a few inches of rich soil, and leaving a ridge of earth on each side for protection, upon which turf or old boards may be placed, and poles or scantlings may be put from front to back, with mats or other coverings thrown over for night protection.

Sow *Parsley* in full crop, if not already done. Encourage the growth of *Angelica* by liberal soakings of liquid manure, and take care that the stalks are cut for preserving previous to their becoming stringy and tough. *Rhubarb, Sea-kale*, and *Globe Artichokes*, should be liberally supplied with good liquid manure, and the suckers of the two latter thinned properly in due season. Make small sowings of the early varieties of *Turnips*; also, of round-seeded *Spinach*. Plant out *Flanders Spinach* on gentle heat, and cover with hand-glasses. Continue to sow *Lettuce*, and transplant out young plants in succession.

FRAMING.—Assist the swelling of the *Melon* by the application of liquid manure; do not allow any plant to carry more fruit than it can bring to the full size, and the best quality; shut up early with a soft humid atmosphere; withhold water from full grown melons, and air freely at all times, giving air previously to the sun shining on the structure, which will prevent canker amongst the vine foliage, and prevent the fruit from cracking. Prepare ridges for a full crop of *Ridge*

and *Gerkin Cucumbers*. The fermenting materials may be spawned for a crop of late summer and autumn *Mushrooms*. Harden off *Sweet Basil, Marjoram, Tomatoes, Capsicums, Chillies, &c.*, previous to their being placed out, to shift for themselves, in the open air. Encourage plenty of *Toads* about frames, pits, and other structures, and there will be no fear of the depredations of troublesome insects. This poor, inoffensive animal (the toad), we are particularly fond of, and we keep and preserve a large number of them. Few animals have suffered more undeserved persecution, as the victims of an absurd and ignorant prejudice, than the toad; condemned by common consent as a disgusting, odious, and venomous reptile; but we have been for years perfectly convinced of its usefulness, its harmless, inoffensive, timid manners, and also of its sagacious, discriminating attachment to those who treat it well. Our own little boy pets and caresses these poor inoffensive creatures, and some of these our old friends, that we have had for years, are large handsome fellows, particularly tame, and fond of being caressed. It is to us particularly interesting to watch their habits, when searching round at night with candle and lantern, watching for plant pests, and regulating the heat, &c., in the various structures, we observe the toads taking their station in some corner or thoroughfare, where various insects are likely to pass and repass, placing themselves remarkably stern and quiet, with their beautiful eyes so fixed, that they appear to see either right, left, or straight before them. We have observed them hundreds of times when so stationed, and seen that without moving their head at all, with their long red glutinous tongue they smack up the various insects in every direction within their reach as quick as lightning; indeed, it requires close attention and quick perception to observe an hungry toad feed. With us, in Devonshire, the wood-lice abound in great quantities everywhere out of doors, both in the garden, the field, and the wood. We work most of our structures requiring fermenting materials with tree-leaves, many hundred loads of which are collected in the winter season; this season, we suppose through the late dry summer and succeeding mild autumn and winter, the wood-lice are more numerous than ever amongst the leaves when brought home; so much so, that in a pine pit, with a shelf all round for cultivating French beans, they became so numerous, after renewing the pit with fresh leaves, that all at once these insects attacked the beans, and, in a very short time, committed serious depredation by devouring the beans in every stage—the seed as it was vegetating, the young plant immediately it was up, and, in every stage of growth, the blossoms and the young beans. We offered a reward for one hundred toads, and soon obtained the desired quantity; in the meantime setting a quantity of traps—small pots, 60's, and dry moss—and caught them by wholesale. Our friends, the toads, however, very soon eradicated the destructive army of depredators after introducing them to our enemy, which had, for two or three weeks previously, diminished the number of forced beans full three hundred per week.

JAMES BARNES.

MISCELLANEOUS INFORMATION.

HARDY BORDER FLOWERS.

In the natural order of Labiates, or Lipworts, we have two plants under the name of *Melitta*, which are extremely beautiful when kindly treated in our flower-borders; and, although they are native plants, they should not be less esteemed on that account; and they are deserving notice because they are rare English plants in a wild state, and almost as rare to be seen in our flower-gardens.

MELITTA MELISSOPHYLLUM.—This plant grows from one

foot to fifteen inches in height, in a well-attended flower-border. Its flesh-coloured, or purplish flowers, are produced in abundance from the axils of the leaves along a portion of the length of the stems; and the stems, leaves, flowers, and the plant altogether, assume a purplish hue. Once well planted, it may remain, as it is not a rapid spreader, many years in the same spot, if it is not injured with the hoe or spade. When the plant appears tired

of its situation, or there is need to increase it, then up with the whole plant, and divide its crowns, with the fingers and thumb, into as many pieces as are required, selecting one of the best pieces for the border again, and interchange its spot with some other plant, its equal in height and colour. If not convenient to change the spot, then change the earth, adding with it a little turfy loam and leaf-mould, and it will be all the better if a little peat be mixed up with it. The long, stringy, and fibrous roots should never be cut, or otherwise injured at the times of border dressing.

MELITTA GRANDIFLORA.—This species, or variety of the preceding, requires precisely the same treatment, but is a very much nobler looking plant, and is altogether of a lighter hue, with very large whitish-purple and violet-coloured flowers. It is, also, more upright in its growth, but rises to about the same height. Both of them flower in May and June; and both I have lifted into pots when in full bloom, without injury to the plant in any way.

BETONICAS.—These, also, belong to the natural order of *Lipworts*; and the whole genus are pretty ornamental border flowers, not excepting our English one, *B. officinalis*, when singled out into a bunch in the border. All of them will flourish in any good garden-soil, and grow from nine inches to a foot high. The best of them is *B. grandiflora*, being not only the largest grower, but the largest flowered. It grows from one foot to fifteen inches in height, producing an abundance of large light blue flowers; and in well-kept rich borders the plant increases fast, so that it should be taken up and divided every two or three years at farthest, to keep the plant to the mark of perfection. It dies entirely down in winter, which is not the case with many other of the species of this family, but it affords a good reason for labels being always placed with the plants, so as to know where to find them at any time. This beautiful plant flowers in May and June.

PRUNELLAS belong to the natural order *Lipworts*, and pretty little interesting plants they are, as front border or rock plants; for scarcely any of them rise more than six or eight inches in height, except one which is called *P. pensylvanica*. This is the noblest species of the whole family, being twelve inches high, and a profuse bloomer. The flowers are very large, of light blue colour. Its chief time of flowering is June and July, but by keeping the old flower stems cut away, the plants will throw up others till the end of autumn. This is a spreading plant, therefore it should be taken up, divided into moderate-sized pieces, and replanted every year. Any common soil suits it, and it would be excellent for rather a cool situation, because this would lengthen its season of flowering. The next best species is *P. hyssopifolia*. This is a pretty, little, upright-growing, freely-flowering plant, and requires to be treated much the same as the last-mentioned species. Its light blue flowers appear from July to September. *P. grandiflora* is also a desirable plant, but though so called, it is not nearly equal to the first-mentioned species.—T. WEAVER.

MILDNESS OF THE PAST SEASON.

I do not know whether it is worth mentioning, but as an indication of the extraordinary nature of the past season, it may be so, that in one garden, which is in the part of Bedfordshire, close upon Dunstable, plants of *verbena* and *calceolaria* have remained in the borders undestroyed. *Crocuses* and *snowdrops* were in bloom in January. *Hepaticas*, *double wallflowers*, *Van Thol tulips*, *anemones*, *daffodils*, *polyanthus narcissus*, *Virginian stock*, *polyanthus*, besides *snowdrops*, and *crocuses* of all colours, which came up later, now deck the borders, and most of them have done so for three weeks past, if not more. Nectarine blossom, is here and there open. Pear blossom beginning to develop itself into its single component buds. Roses in such a state, that if we have sharp cutting weather, our chance of bloom will be very bad, except with the autumnal ones. *Jacques Lapite*, and *La Reine*, and *Barrone Prevost*, in the state they would usually be found in the early part of May; and, which I forgot to mention before, *Erysimum Perofskianum*, in flower; this latter it is a great mistake to call an *annual*, as many do. *Pheasant's eye*, and *potentilla*, have also been gathered in the garden, and the common shrubby *white candytuff*, I think it is (the folks here call it "Marry-me-quick"), is in flower in large bunches.—T. H. R., March 31st.

TO CORRESPONDENTS.

GREENHOUSE AND VINERY (R. O.).—This is 16 ft. by 12 ft. against a south wall. If you mean to plant your vines outside, then the position of your doorway, two feet from the front wall, will answer well. If you design to plant them inside of the house, and close to the front wall, so that the roots may find their way out through arches, then we would borrow half a foot more; and then, supposing you have a nine-inch or a foot flue, you can have a little border between it and the front wall in which to plant your vines. We say this, because your flue will be most effectual if it passes along the front of your house; eighteen inches from the front wall, if you plant vines inside; and a few inches, if the vines are to be planted outside. We like the first best, but then your border inside must be higher than that outside. The fire-place may either be at the front or back; it is generally more out of the way in the latter. If you sink your stoke-hole deep enough, you need not have your flue above ground until you pass the end and get to the front of the house, and this will prevent the necessity of sinking it at the pathway. If you mean to have a pathway right through your house, with a door at each end, then the flue must sink at the pathway; but if you have only one door, then continue the flue round the end, and let it either rise there into a chimney, or be returned along the back wall and let it ascend above the furnace, through, across the ends, and along the front is quite sufficient for such a house. The making of flues, &c., has several times been referred to.

PORTULLACA (Sarah).—You may transplant this to a sunny knoll in the beginning of June.

VERBENAS AND PETUNIAS (Ibid).—We should not like to risk these in the beginning of May, unless we could screen them at first. We prefer letting the first dozen of days go past, preferring security to haste.

CAMELLIA DONE FLOWERING (Ibid).—As you have no greenhouse, keep it in the window, and give little air until it has made fresh shoots; then give more air by degrees, and when the shoots are a little firm, set the plant out of doors in a shady place, and house it again before winter.

OLEANDER AND CRASSULA (Ibid).—These will flower in your window, but you must recollect that it is only the shoots that are made in one year that bloom the next. After June, set the *Oleander* in a position out of doors slightly screened from the sun; give the *Crassula*, after the same period, all the sun you can.

AZALEAS NOT FLOWERING (A Weekly Reader).—These will flourish in heath soil only, a little gravel along with it will do them no harm. Very likely they are over-potted, at any rate they had better be reshifted in sandy peat, kept close and warm afterwards, and syringed and well watered to encourage growth; then, in about six weeks, give air, first rather sparingly and then abundantly, and ultimately set them to rusticate in a rather open but shaded place out of doors, and get them housed in October.

DIELYTRA SPECTABILIS (Ibid).—This is supposed to be quite hardy. When grown as a greenhouse plant, it should be kept rather dry all the winter, and when it begins to push, it may be either top-dressed or re-shifted. If shifting is delayed, the flower racemes will be injured. Hence it is as well to shift before growth commences, and then the roots get into the fresh soil at once. Propagate by division of the root; by young shoots in sandy soil, taken off as mentioned to-day for *Erythrina*; by cuttings of the stems after flowering, and very likely by seeds. The cuttings are very apt to damp if not looked after. Sandy loam is better than sand alone, and no higher temperature than the plants were growing in; cover with a glass, but not close.

NEMOPHILA (H. W., a Subscriber from the Beginning).—Your *Nemophila* with maroon-coloured flowers, and small white blotches, is unknown to us; but it is almost impossible to tell what a plant is by mere description. We should say, from experience in other plants, that yours is a new hybrid. Will you oblige us by sending us a flower when you have one in bloom? *Nemophila aurita* is blue.

IPOMEA BURRIGII AND DICKSONII (J. W. F., Tavistock).—These are mere varieties, though very beautiful ones, of *I. major*. They require to be struck from cuttings to be quite certain of the varieties. They are hardy enough to grow in the open air during the summer months, but, like their parent, do better if sown in a gentle hotbed in March, and transplanted in the open border in May. They will bloom very well if potted into 8-inch pots, trained to a trellis, and kept in the greenhouse to bloom and produce seed.

PIT HEATED BY DUNG (A. G.).—The best way to make you understand Mr. Appleby's meaning in the article you refer to, which appeared in No. 126, page 335, will be to give you the dimensions of the pits he describes.—The space they stand upon is 32 feet long and 15 feet wide; the pits, or raised frames, are each 11 feet long and 5½ feet wide. The spaces between each pit or frame are filled with dung in a fermenting state. There are no back or front walls; the slates rest upon the end and central cross walls. The hollow spaces between the cross walls are filled with hot dung, which is renewed as the heat declines. Care must be taken that the dung lining outside reaches and is kept above the lower edge of the frame. This is to keep the heat from escaping from the under side of the slate.

BEES (A Constant Reader, Sudbury).—The material of which the vessel is made in which honey is stored makes no difference whatever in its quality; but if intended for sale, that in glass fetches the best price by 2d. or 3d. per pound. If the *hive having comb* at the top be of straw, put no bees into it; if of wood, see there are no moths in it, and if perfectly free from them, hive your swarm into it—the combs will be very acceptable to your bees, and a great help to them.

TRANSPLANTING HARDY ANNUALS (W. K.).—All the hardy and half-hardy annuals will transplant, as we have often said; their height and their colour you can easily see by referring to the index, or to *The Dictionary*, as you take it in. If we were to occupy space with repeating the same things over and over again, we should be of little use to you; nevertheless, if you make out a list of what you wish to grow, and number the names, we will give you the heights and the colours.

OXALIS (Royalist).—*Oxalis purpurea*, if you have it true, is quite hardy, and is a most beautiful thing for a patch on a narrow border, or in

the front row of a wide one. It flowers from the middle or end of May, for a month or so; the flowers are reddish purple, and do not rise above three inches above a dense mass of shamrock-like leaves. *Oxalis Bowianu* makes an exceedingly gay bed by the following management:—Pot the bulbs in January, and encourage them to grow in heat before the spring is out, so as to be ready to plant out in May; but they are hardy enough to stand out in a warm border, if planted six inches deep; in this case, however, they will only bloom late in the autumn—besides, they bury themselves deeper and deeper every year, which keeps them still later from flowering. Colour, deep rich rose; height, about ten inches.

HYACINTHS (*J. S. L.*).—Yes—the nemophilas may be sown now over the hyacinth beds; or young plants of them from a former sowing may be transplanted there when they have made five or six leaves. All the geraniums and calceolarias, many of the verbenas and petunias, double American groundsel, two sorts, and *Lantana Sellowii*, will do to grow in baskets on a lawn; but what are more strictly called greenhouse plants do not flower long enough to entitle them to that style of gardening.

BEGONIA EVANSIANA (*W. S. P.*).—You did right in setting the Begonia in the cupboard after it died down, and in placing it on the mantel-shelf now. If the soil is moderately moist, do not water until you see the young shoots peeping; but if very dry, you may either water, or shift into fresh soil and water afterwards. We trust that after all the care you have given the roots are not dead. By taking it to the mantel-piece at night, until the middle of June, it will grow faster being placed in the window during the day. The very fine specimens that Mr. Fish mentioned could not be grown so fine in a window; but you may have nice plants, though smaller.

FLUES (*A Constant Subscriber*).—Mr. Fish can say little more about these in addition to what was stated at page 385 of last volume, except that he has seen the gardener referred to since, and that he speaks very highly of them. The depth of the flue is two bricks set on edge; width from five to six inches, instead of from four to five. The bricks set on edge are bedded on thin slates; these slates cover the top of the flue, and then across the joints of the slate the paving tiles are placed on a level with the floor of the house, all the floor being covered with paving tile from nine inches to a foot square. The top of the flue, therefore, when covered with the slate and tile, just forms part of the floor, and is never noticed. Mr. Fish mentioned the importance of leaving a few inches hollow by the side of the flue, but Mr. S. says that there is no occasion for it, as there is always heat enough without it. The furnace is in a stoke hole, covered with a trap door, at the back of the house; the flue passes along the end, along the front, two or three feet from the front wall, crosses the farther end, and rises there into a chimney. In such winters as the last, there will be no necessity for cleaning the flues, though in general it is best to give them a scrape every year. Be sure that the top of your furnace is eighteen inches or two feet below the top of your flue, and the draught will be always good. For small houses we really think such flues the cheapest mode of heating at present to be had, unless you can do the work yourself. As bearing on the subject, it may be stated that a house larger considerably than the one referred to by Mr. Fish, twenty feet by eight feet, was heated for less than five pounds, by hot water, but then the gardener had a boiler made at a country foundry, bought the pipes, &c. Until boilers and pipes can be got suitable, and at a fair price, amateurs must do likewise, or content themselves with such a flue. The price may be easily obtained, by knowing the price of bricks, tiles, &c. It will at once be seen that draining tile slips, house tiles, &c., may be substituted for slates, and even bricks for flooring tiles, &c. We believe that, as respects attention and consumption of fuel, such narrow flues are far more economical than any hot-water apparatus, without a flue, as in such circumstances, however well set the boiler may be, a great portion of heat will get out at the chimney.

CAMELIAS TO BE PLANTED OUT (*A Lady Subscriber*).—We should have known better how to answer your inquiries, if you had given us as much insight into your locality, as even the name of your county. You propose putting your camellias in a round clump in the garden, mulching their roots, and covering with a frame-work of mats in winter. In some places they would keep alive and grow, though the flowers are always apt to be injured by spring frosts. Choose a rather sheltered, but shady, situation; exposure, north-east, or north-west. Mulch with dry fern, and shelter with glazed calico, or tarpaulin, instead of mats, or have such outside of mats in very severe weather, and the plants will thus be kept dry. They do well in many places trained against a north, north-west, and north-east wall; but the mischief is, a frosty night in spring, though it does little harm to the plants, spoils the looks of the flowers. See list of winter-flowering plants for small greenhouses, in our last volume.

VINERY (*A. Foster*).—We cannot give plans, but we can offer an opinion. Twenty feet long by fourteen wide, is a fair proportion. Some prefer metallic frame-work; we prefer wood, for metallic roofs are, indeed, rapid conductors, soon too hot, and soon too cold. You must have a heating surface equal to the surface of four parallel rows of four-inch piping, to be a good early house. Also, a good pitch to the roof, and glass that will not burn your plants. You will do well to consult back numbers; there has been no particular advance since the commencement of this work. Can you not obtain the assistance of a professional person, or of a really good gardener?

APPLE CUTTINGS (*J. M. W.*).—Put out your apple cuttings directly; they should have been planted in February. They will strike in any shady place out of the sun and wind. Take last year's wood a foot long, and bury eight inches in the soil, keeping them always moist. Double wallflowers in a similar way, now, or when the young growth gets firm about Midsummer. You are quite right in saying that our reference at page 17, should have been to *Job*, but many believe that Solomon wrote that book.

COCHIN-CHINA FOWLS.—Mr. Bowman says that those alluded to in his former communication attain a large size, the cocks, when full-grown, weighing 12 lbs., and the hens 8 lbs. The body is short and compact, tail and wing very small, thigh remarkably thick, and the stilt short. The colour of the cock is a rich black red, his crow very loud, and much resembling a roar. If M. H. (*Chester*), or any other reader of *THE COTTAGE GARDENER* wishes for further information, Mr. B. will be glad to answer their inquiries, if accompanied by a directed envelope. His direction is, *R. H. Bowman, Rose Vale, Penzance*.

PANSIES (*W. J. M.*).—The flowers of your pansies were so dried in coming to us, that we found it impossible to name them. They appear well formed flowers; the edging of one was bad. The seed from them may produce good flowers. All correspondents desirous of having their flowers named, should pack them separately in damp, not wet, moss, in a small tin box. This would keep them fresh, and prevent them being crushed by stamping in the post-office.

NURSERYMENS' APPRENTICES (*Constant Reader*).—The only way to get into a nursery near London, is for some friend of the young man who is acquainted with any of the following nurserymen, Messrs. Low, of Clapton; Messrs. Henderson, of Pine Apple Place; Messrs. Knight and Perry, Chelsea; and Messrs. Rollison, Tooting; to write to any of these nurserymen, get the young man's name entered on their books, and he will obtain employment in the nursery about next March. Most of the nurseries at this time are quite full of hands. No premiums are required. The wages average 10s. per week.

NAMES OF PLANTS (*A Constant Reader*).—Your mosses not being in fruit, we can only name the following, and on these we are somewhat doubtful:—2. *Dicranum heteromallum* (?). 3. *A. Jungermannia*. 4. *Dicranum bryoides* (?). 7. *Dicranum taxifolium*. 8. *Hypnum rutabulum*. 9. *Fumaria hygrometrica*. 10. *A. Jungermannia*.

GARDEN PLAN (*E. S. P.*).—Fifty have made similar applications: what could we say to them if we acceded to your request?

BROAD BEANS (*E. Stevens*).—The holes down to the seed beans in the drills, and the destruction of the beans, are the work of mice. Cover over each row two inches deep, and six inches wide, with very fine coal ashes.

SEEDLING ORANGE-TREE (*A Young Reared*).—Having no stove, it will weary you out by its slow growth. Years, under the best circumstances, would elapse before it became fruitful. If, by "what is the best thing for a stiff clay soil?" you intend to inquire for what would best improve its staple, we reply—draining, and mixing with it per acre some hundreds of loads of drift sand, fine lime rubbish, and coal ashes. Burning about forty tons of the clay taken from the banks, ditches, &c., and mixing this with the soil is also good treatment.

BROWSTON HYBRID CUCUMBER (*A Subscriber*).—Here is another application for information where he can obtain seed of this variety. Some seedsman who will send the information required, will find it answer his purpose.

STOPPING CALCEOLARIAS (*Lazarus*).—Two months should be allowed between the last stopping of calceolarias, and the time you wish them to be in flower. You ask "what is the best to succeed *anemones* that were planted last autumn?" There are so many fitting things, that the choice is embarrassing—scarlet geraniums will answer, so will *heliotropes*, *verbenas*, or *petunias*, or you may sow some showy hardy annual. Dr. Lindley's *School Botany* will suit you; any bookseller will tell the price. The *Cottage Gardeners' Dictionary* does not interpret botanical terms further than those applicable to gardening.

CUCUMBERS AND MELONS IN SEPTEMBER (*Cymra glan*).—You may obtain these by sowing immediately. For these crops you had better grow the *Syon House* cucumber, and the *Beechwood* melon.

PRIMROSE (*A. P.*).—The primrose changing, or, as gardeners term it, sporting into the polyanthus, is not at all an uncommon occurrence. There is evidence that the primrose, polyanthus, cowslip, and oxlip, are only varieties of the same species. There is no doubt that the soil has great influence over the change.

BLACK-EYED SUSAN PEA (*J. R.*).—Our correspondent has sent us a sample of this which he says is a very common field pea, near Thorne, in Yorkshire, and is considered by the farmers a very good and prolific pea. It is darkish skinned for a white pea, oval-shaped, black-eyed, and rather above an average size.

GARDEN BORDER EDGING (*T. M. W.*).—We like the earthenware edging of which you sent us a specimen very much. It is exceedingly neat and useful, acting at the same time, if properly set, as side drains to the walks. It would look best painted stone colour. If the maker will have a woodcut of it made, and have this inserted with an advertisement in our paper, and in other gardening papers, we think a very large sale would be obtained. The white sample of sand in its washed and dried state, would do well for cuttings and seedlings; the yellow washed sample would probably do for potting composts.

HAMILTON ON THE PINE-APPLE (*B. M.*).—The price of this little volume is, we think, ten shillings.

DISSOLVING BONES (*A Constant Reader*).—On a small scale, 6 lbs. bone-dust, 3 lbs. oil of vitriol, 1½ lb. water. Sprinkle the water on the bones first, and then add the vitriol. Be careful, for it is very corrosive. Use a cask large enough to hold twice the quantity. As much ashes or water may be mixed with the dissolved bones as will enable you to sprinkle it over the plot of ground regularly. The above quantity of bones and vitriol would be enough for 100 square yards. If you purchase the sulphuric acid in large quantities, you may obtain it for three-half-pence per pound.

LIQUID MANURE TO STRAWBERRIES (*W. R. S.*).—Your house sewage well diluted (probably four buckets of water to one of sewage), will greatly benefit your strawberries, applied to the soil twice a week. The liquid must not be applied until the plants are fully in blossom. House sewage, somewhat less diluted, is an admirable manure for asparagus, rhubarb, lettuces, and all the cabbage-worts.

GUANO FOR ROSES (*J. Short*).—Guano may be made into liquid manure, and applied advantageously to roses in the borders. Two ounces to the gallon of water may be used in that situation. Apply it once a week, or twice in wet weather.

PYRUS JAPONICA (*Dorothea*).—This (now *Cydonia japonica*) is growing as a standard in our own garden, but it only grows bushy. The *Summer Duck* is the most ornamental species we know, and would keep your stream as clean as any other duck.

LONDON: Printed by HARRY WOOLDRIDGE, Winchester High-street, in the Parish of Saint Mary Kalendar; and Published by WILLIAM SOMERVILLE ORR, at the Office, No. 2, Amen Corner, in the Parish of Christ Church, City of London.—May 8th, 1851.

NEW DAHLIAS; E. Foster's, Esq., Choice Pelargoniums; Picotees, Carnations, Hollyhocks, Pansies, &c.

WILLIAM BRAGG, Star Nursery, Slough, begs to say his Catalogue of the above Flowers is now ready, and can be had on application. His choice SEEDLING DAHLIAS will be sent out the first week in May, at 10s 6d each, viz.—

ADMIRAL, rich lilac, very constant, gained first Seedling prize, 25s, at the Royal South London Exhibition; 21s Shacklewell Open Shows, &c., fourteen first-class certificates; the most successful flower of the year.

CARMINA, rich carmine, constant show flower, gained six first-class certificates, &c., shown in several winning stands.

The **HON. MRS. ASHLEY**, waxy white, tipped with rose, splendid show flower, &c. W. B. thinks it the best Dahlia of the season; was awarded by Dr. Lindley a certificate of merit at the Horticultural Society, &c. Gained five first-class certificates.

QUEEN OF FAIRIES, Domeyer. W. Bragg has purchased the stock of this fine and constant fancy Dahlia, from the above amateur, who will give £5 in prizes the next season for this flower. It gained a Seedling prize and first-class certificate, with Edwards's Mrs. Hansard; at the Royal South London Open Show Exhibition five first-class certificates.

W. B.'s stock of Picotees, Carnations, and Pinks are strong and good. The best Hollyhock Seed ever sent out can be had in 2s 6d and 5s packets, post paid, for prepayment.

NEW DAHLIA.—YELLOW GEM. The most useful (in the present dearth of good yellows) that has been shown, having received a certificate at the great trial show of the Metropolitan Dahlia Society, and also at the Stoke Newington Exhibition, will be sent out in May, at 10s 6d per plant. Usual allowance to the trade. **W. GURNEY**, 36, Wilmot Street, Bethnal Green.

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M D	W D	MAY 15—21, 1851.	WEATHER NEAR LONDON IN 1850.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bef. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in In.						
15	Th	Beech flowers.	29.916—29.902	52—25	N.E.	—	11 a. 4	42 a. 7	rises.	☺	3 54	135
16	F	Maple flowers.	29.947—29.930	55—37	N.	0.01	9	43	9 a 6	15	3 54	136
17	S	Wood Argus Butterfly seen. [seen.	29.927—29.877	66—43	N.W.	0.02	8	45	10 12	16	3 53	137
18	SUN	4 SUNDAY AFTER EASTER. Burnet Moth	29.782—29.767	68—40	N.W.	0.01	6	46	11 9	17	3 51	138
19	M	Saintfoin flowers.	29.797—29.766	72—44	E.	—	5	47	11 56	18	3 49	139
20	Tu	Peony flowers.	29.745—29.692	69—46	E.	0.02	4	49	morn.	19	3 47	140
21	W	Sun's decl., 20° 10' N.	29.749—29.684	68—49	N.E.	0.11	2	50	0 34	20	3 44	141

WHEN STEPHEN SWITZER first became "a practitioner in gardening," about the year 1702, even kitchen-gardening was in a state little improved above that in which it existed among the Romans; and when a book upon gardening was published, the author contented himself with translating all that was applicable to his subject from Cato, Columella, Varro, and Pliny, neither did the translator trouble himself to separate that which was absurd from the little that was correct, though correct only in the climate of Italy. Thus, Gervase Markham, as late as 1614, published a translation of Heresbachius, who gravely says, "If you break to powder the horn of a ram, and sow it, watering it well, it is thought it will come to good sperage (asparagus)." To encourage larceny among gardeners, he adds, "Rue being stolen prospereth better." Now, if we except the writings of the Rev. Mr. Lawrence, there were none much better than that we have quoted until Switzer added to our gardening literature. We say this without forgetting what Evelyn, London, and Platt had published, for their works on horticulture were almost entirely translations.

Gardening, until Switzer's time, was, indeed, at a low ebb. Cucumbers, he tells us, were seldom seen before the end of May, but that "the industrious were striving to outvie one another, and would probably produce them in February, or earlier." Melons had rarely been cut by the middle of June; but, he adds, "now the latter end of April is the season for the first crop." He traces the former absence of improvement in gardening to the ignorance of its practitioners, and that ignorance to the want of encouragement under which they were labouring. Instead of being treated as a superior member of the establishment, he says, "too many masters have no more regard for a good gardener than they have for a dog-boy; at best, he must be subject to the ill-treatment of any reigning parasite, or those that get their living by tale-bearing, and often by something worse." A situation which rendered its holder liable to such degradation, would only be held by those worthy of no better treatment. "We see some of them in good places, too," says Switzer, "who never open a book, nor can they either read, spell, or pronounce rightly (the names of) the very plants and herbs they every moment have in view. The *Spiræa frutex* is by some (called) the *Fiery frostive!* and the *Cherophyllum*, *Cartfoyle!*" Amid this state of gardening affairs Switzer came forward as a reformer, and he met, as we shall see presently, with the usual fate of reformers, contumely, misrepresentation, and persecution. Truth, as usual, has triumphed in gardening; and we need not now occupy any space—though Evelyn and Switzer found it needful—to prove the fallacy of their contemporary proverb, "A fool is as good a gatherer of a sallad as a wiser man."

Stephen Switzer, whose works have led to these remarks, was a general gardener and seedsman of the reigns of Anne and George the I. He was a native of Hampshire, and his family descendants still linger in the county. We know of some in humble life, and the memorials of others may be seen in the church-yard of Hyde parish, in Winchester. He acquired his knowledge of the art under the great masters of the day, London and Wise, having been, as he states in the title page of his *Iconographia Rustica*, for several years their servant. He completed his apprenticeship at the close of the 17th century. In 1706, he was employed under London in laying out the grounds of Blenheim. When Mr. Lowder was superintendant of the Royal Gardens at St. James's, Switzer was employed in them in the capacity of kitchen gardener. In 1724, he was gardener to the Earl of Orrery, as appears from the dedication of his *Practical Fruit Gardener*. The same dedication is retained in the edition of 1731. He appears at one time to have been in the same capacity servant to Lord Brooke, to Lord Bathurst, and also to Lord W. Russell, who suffered in 1683. Of this true nobleman, he thus speaks:—"I must not pass over the character of one of the best of masters as well as gardeners, I mean the Right Honourable the Lord William Russell, son to the then Earl of Bedford. I shall not pretend to touch upon the matter of his unhappy fall, that being set in a true light by other hands; it shall suffice me to say, as I had it from a near and dear relation, that by the loss of that zealous assertor of the liberties of his country, besides those, and the more natural properties of a tender husband and father, the world was deprived of one of the best of masters and encouragers of arts and sciences (particularly gardening), which that age produced. As for his works in gardening, they were none of the smallest; for being possessed of a plentiful fortune, by the marriage of his virtuous lady, who is still living, he made Stratton, about seven miles from Winchester, his seat; and his gardens there some of the best that were made at that time, such, indeed, as have mocked some that have been since done. But the untimely fall of that true lover of his country, prevented his farther pursuit of that matter, in which, I am well informed, he designed more. The gardens at Southampton House, in Bloomsbury Square, were also

of his making, and are as well as any of that model. I have been more particular in this, on occasion of the loss I may have sustained in so great a friend (being brought up in that place where he used to spend his happy days), whose memory I beg leave to admire, and whose death I, with all true lovers of their country's liberty, do heartily bewail." Gardeners in his time were accustomed to ply about Westminster Hall, and the Royal Exchange, offering trees, seeds, &c., for sale. In the first named place, having commenced business as a nurseryman and seedsman, he kept a stand for the sale of his productions, bearing the sign of the Flower Pot, close by the entrance to the Court of Common Pleas, and we have in our possession probably the only specimens of his hand-writing remaining, and these are in bills for seeds sold to Lord Fairfax. See a copy of one at page 183, of volume iii. His garden was at Milbank. Where he resided we have been unable to determine, but he dates his *Dissertation on the true Cytisus of the Ancients* in 1731, from New Palace Yard, Westminster. Mr. Loudon says he died in 1745, at which time he must have been eighty years of age.

For the foregoing very imperfect sketch of his life, we are indebted solely to accidental notices contained in his own works. It is an instance of the partiality of fame, that of this horticulturist no contemporary authors make mention, whilst of Bradley and others, infinitely his inferiors in every point, we have full particulars. This neglect, and even persecution attended him through life. It appears, from his own account in 1731, that some "great man some years deceased, charged him with not finishing his work, and embezzling several hundred pounds, the falsity of which is visible and speaks for itself." His brother seedsman also opposed him with considerable acrimony because he was not bred to that trade, but as a gardener. Neglect has pursued him beyond the grave, for his works are seldom mentioned or quoted as authorities of the age he lived in. To us he appears to be the best author of his time, and if called upon to point out the Classic Authors of Gardening, Switzer should be one of the first on whom we would lay our finger. His works are evidence that he was a sound practical horticulturist, a man well versed in the Botanical Science of the day, in its most enlarged sense; of considerable classical and literary attainments, above all that he was a religious character; and they completely warrant us in receiving as correct the modest notice he takes of himself in the preface to the first volume of his *Iconographia Rustica*. "I hope I shall not be altogether unfit for this work, by the happiness I have had in an education none of the meanest for one of my profession, and of having a considerable share in all parts of the greatest works of this kingdom, and under the greatest masters; and even that which some may probably reckon otherwise, I mean some small revolutions and meanness of fortune, as it has sometimes thrown me upon the greatest slavery, so it has at other times amongst the best men and books; by which means, and I hope an allowable industry and ambition and an eager desire of being acquainted with all parts of this nation, as well as the useful parts of gardening, I have tasted both rough and smooth, as we plainly call it, from the best business and books, to the meanest labours of the scythe, spade, and wheelbarrow." That by misfortunes he had been reduced to a humble station in gardening, he often glances at. From the above preface, we also learn, that he had travelled on the continent, especially in France, paying particular attention to the style of design in ornamental gardening. This preface is throughout well worthy of perusal; independent of an eloquent, though in places far too florid style, it breathes an appropriate feeling of love for his art, a spirit of candour in warning gentlemen of those errors both of expence and penury which were alike sure to defeat their object, in the ornamental disposition of their parks, or "extensive gardening" as he appropriately terms it, "a kind, he observes, not yet much used with us." It is curious, among other warnings, to find him telling the landed proprietor to beware of the Scotch gardeners, who even in his day appear to have been objects of jealousy, and caused him to forget his accustomed suavity. "These Northern Lads, which whether they have served any time in this art or not, very few of us know anything of, yet by the help of a little learning, and a great deal of impudence, they invade these southern provinces, and the natural benignity of this warmer climate has such a wonderful influence on them, that one of them knows, or at least pretends to know, more in one twelvemonth than a laborious, honest south countryman does in seven years."

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last 24 years, the average highest and lowest temperature of these days is 65.3° and 43.9°, respectively. The greatest heat, 85°, was on the 17th, in 1833; and the lowest cold, 26°, was on the 15th, in 1838. During the period 104 of the days were fine, and on 64 rain fell.

PURSuing our indications of the gardens in the neighbourhood of London worthy of being visited, we will now proceed to note a few of the private grounds which merit such attention.

The Royal Gardens, Frogmore, near Windsor.—Gardeners,

and amateurs, who love to see a fine range of hothouses devoted chiefly to the culture of all kinds of fruit, in the most scientific mode, will not fail to pay a visit to these regal gardens. There are pineries, vineries, peach-houses, cherry-houses, a plum-house, with abundance of conveniences for forcing vegetables—such as asparagus beds, heated by hot water; well-managed mushroom-houses, fruit-rooms, &c. In

addition, there is, perhaps, the largest extent of walls for fruit-trees in the three kingdoms. Then, again, there is close by, the truly royal residence of *Windsor Castle*, and the fine views from the terrace, and the noble park. The visitor, whilst here, must not forget the Long Walk, the Virginia Water, and the large vine at *Cumberland Lodge*. All these sights are within the compass of a day's excursion.

Close to Frogmore is the beautiful seat of Sir John Cathcart, at the far-famed *Cooper's Hill*—a site that for fine views is not excelled in the kingdom. There is, also, a good garden, a nice range of hothouses, greenhouses, and conservatories, in which is a good collection of well-grown plants. There are two railways to Windsor; the Great Western, from the Paddington Station, and the South Western, from the Waterloo Bridge Station. Distance about twenty miles.

The *Duke of Devonshire's Villa at Chiswick*.—This is a beautiful villa residence, with a fine range of plant-houses, and a large flower-garden, cultivated in the bedding-out style, now so much the fashion. In the pleasure-ground there is an avenue of noble Cedars of Lebanon. Six miles from London. Omnibuses, and railway from the Waterloo Station.

Duke of Northumberland's, *Sion House*, Isleworth.—In the gardens at this place is a large and lofty half-circular house, filled with rare exotic fruit-trees. There may be seen the Nutmeg-tree, the Vanilla, the Banana, the Lee-Chi from China, and various other tropical fruits, either in fruit or blossom. In the pleasure-ground is a fine collection of rare hardy trees and shrubs of immense size. Omnibuses from the Bank every hour to Brentford. Eight miles.

Mrs. Lawrence's, *Ealing Park*.—This far-famed place must not be omitted. Famous for, as is well known, a splendid collection of Orchids, and stove and greenhouse plants, grown to the highest state of excellence. Eight miles from London. By the Brentford omnibuses, or Great Western Railway to Ealing Station.

H. Collyer, Esq., *Dartford*.—This gentleman's collection of Stove and Greenhouse plants is most excellent, vying with, and sometimes even surpassing, the last-mentioned collection. By the North Kent Railway to Dartford.

S. Rucker, Esq., *Wandsworth*.—The most remarkable feature in these beautiful gardens is the unrivalled collection of that singular tribe of plants, the Orchids. General lovers of plants will not be disappointed, however, as here are well-grown specimens of Stove and Greenhouse plants in almost endless variety. Six miles from London. By railway from the Waterloo-bridge Station.

H. Schröder, Esq., *Stratford Green*.—This gentleman also has a good well-grown collection of Orchidaceæ. By Eastern Counties Railway from the Shoreditch Station. Four miles.

R. Hanbury, Esq., *The Poles*, near Ware.—In the short space of three years this place has come into repute as a place worth seeing. There is a large Orchid-house well filled with fine plants; a large Stove, also well-inhabited; and a Greenhouse, of the same dimensions, well-furnished with young rising specimens. By Eastern Counties Railway to Ware. Eighteen miles.

W. H. Farmer, Esq., and Sir E. Antrobus, both near Cheam, and both famous for good collections of plants. Epsom Railway to Cheam from London-bridge. Sixteen miles.

WE have great pleasure in bringing the following prominently before our readers:—

PROSPECTUS—Mr. F. Y. Brocas (at R. S. Hill's, Esq., Basingstoke) has some sets of specimens of *British Mosses*, (containing fifty species), mounted on small note-paper, which he is desirous of disposing of to subscribers. Subscription 5s., or free by post, 5s. 6d. Mr. B. hopes to be able to continue the collection of British Mosses, and to publish them in sets of fifty species, at the same price, from time to time, as opportunity may offer. In order to accomplish this object, Mr. B. will be happy to receive Mosses in exchange for Flowering Plants or Ferns.

GARDENING GOSSIP.

At the *Horticultural Society's Show*, on May the 3rd, which, with their usual bad luck, happened on a cold, rainy day, the show of plants was as fine as we ever saw

them. We are not fond of grumbling at the judges, for we know their difficulties and trials; but we cannot help finding fault with those who placed Mr. May, gardener to Mr. Lawrence, before Mr. Cole, gardener to Mr. Collyer. The monster *Epacris grandiflora*, which has not a single good quality in the culture, but is a mass of confusion, was one plant, and the great *Pimelea spectabilis*, miserably drawn in the forcing, and yet not half bloomed, was another which should have put the collection aside. Mr. Coles's plants were not so large, but better grown, better flowered, and in better, that is to say more healthy, colour. These two collections were first and second; Mr. Frazer third, and Mr. Pamplin fourth. In the next class of stove and greenhouse plants, Sir E. Antrobus was first, and Mr. Coster second. The orchidaceous plants excelled former shows. Lord Killmorey was first; Sir E. Antrobus second; Mr. Woolley third; and the Duchess of Northumberland, fourth. Among this tribe, the two most extraordinary plants were *Phalenopsis grandiflora*, shown by Mr. Kinghorne, in the highest state of perfection; a spike of its lovely white flowers a yard long, and the lowest bloom not showing the least symptom of age. The other, *Vanda suavis*, exhibited by Mr. Veitch, a magnificent specimen. Mr. Veitch also exhibited two plants of *Madenilla magnifica*, from Manilla, a plant worth a journey to its native place to see, had it not been brought nearer. The bracts are rich pink, and the blooms, before they open, are like splendid bunches of grapes of a deeper colour than the bracts. As the bloom advances, the bunch becomes more open, and each of the grape-like buds open. It is not so truly grand when open as it is while advancing.

A noble collection of *Rhododendrons*, from Sion House, occupied a fine position, and formed a very grand feature. *Azaleas* (Indian) were numerous and beautiful, and the show was beyond measure grand and imposing. Among Florists' flowers, there was an improvement. *Pansies* were shown in pots, and looked remarkably effective. *Auriculas* were coarse. *Seedlings* of all kinds were scarce. Hoyle's *Magnet*, a new *Geranium*, is a new colour, a rich crimson scarlet, and will be effective in collection, though a little crumpled. Hoyle's *Celia* is a rich orange scarlet, and pretty. *Chieftain* is a crimson, with one of the worst faults a geranium can have—the lower petal sticks up away from the other four; and this is rather early evidence of bad censorship at the National Society, where this said *Chieftain* has actually received a certificate. If certificates are already given by that Society to flowers with radical defects, it is evidence that the opinion entertained by Florists', that there must be an election of censors by the whole of the members, is just. Turner's new geranium, *The First of May*, is too like many we already possess to be good for anything as a new one; but even that is said to have been favourably certified by the National. Of *Cinerarias*, there were many: the only two which we think distinct, and an advance on what we have, were *Marianne*, a pink-tipped variety of very fine form, and *Lady of the Lake*, a lilac-tipped, scarcely inferior. Several of last year's were shown; the best of which is *Lady Hume Campbell*; but the two we have mentioned are better, neither of them having the notch which is too conspicuous in many of the present favourites.*

The *Beauty of Bath* Auricula is not first-rate, though an acquisition. Its principal fault is the shortness of its footstalks, which will always prevent it from being a good show flower; the truss can never be large and fine.

* We shall give a fuller list of the plants exhibited.—Ed. C. G.

At the show at Oxford, Mr. Bates exhibited *Geraniums* without sticks, short, strong, wide, well-grown plants, which of course took the prize against drawn plants unable to sustain themselves, and, therefore, propped all over. We are happy to record this, and hope the example may be followed.

A Society has just started under the highest auspices at *Hereford*, the rules of which are good. The judges are to be selected from among the most experienced censors, and all subjects to be judged by the standards laid down in "Glenny's Properties of Flowers and Plants."

The *Principal Tent in the Horticultural Gardens* is now between four and five hundred feet in length, nearly two hundred feet having been added since last year.

Several nurserymen have engaged to supply *Plants to the Chrystal Palace*. Messrs. Rendle, of Plymouth; Bragg, of Slough; Loddiges, of Hackney; Lane, of Berkhamstead; and others, occupy prominent stations.

These gentlemen have undertaken a task of the extent of which they are hardly aware. The continued supply of fresh plants, as others fade, will be more trouble than they calculate on; but the effect of plants upon the scene is very beautiful.

At Chiswick, *Carnations and Picotees are to be shown in their Pots*. Of course, with all the advantages of carding and retaining all the blooms, whether split or not, and without any reference to the rules by which cut flowers are judged.

Instead of four-and-twenty blooms being stuck in a two-foot square box, there will be as many plants side by side, and a great benefit of this will be found in the additional comfort of the exhibitors, who, if they wish to look at one flower, do not prevent others from inspecting the remainder, which is always the case when the whole twenty-four are crammed into one little box.

The Chiswick Gardens have a very pretty addition made to them by Mr. Waterer, who has planted a splendid collection of *choice American plants* very tastefully, and, in fact, seems almost to have transferred the picked specimens of his whole nursery. This cannot fail to be attractive.

We are glad to see that the fashion of *Ladies carrying Bouquets* at evening parties, the theatres, and in their carriages while out only for a drive, is on the increase.

A young lady at a ball, without a nosegay, is set down for a deserted one; but ladies begin to understand that a bouquet from a nursery, and one from Covent Garden, are very different things. In Covent Garden, almost all kinds of flowers are picked to pieces, and wire put to each bit for a stalk; it is, therefore, no use to put them in water: a Covent Garden nosegay is the most artificial thing imaginable. The only way to make a good one is to buy the individual sprigs required, and tie them together; one of this kind will live for days, and is worth a dozen stilted on wires.

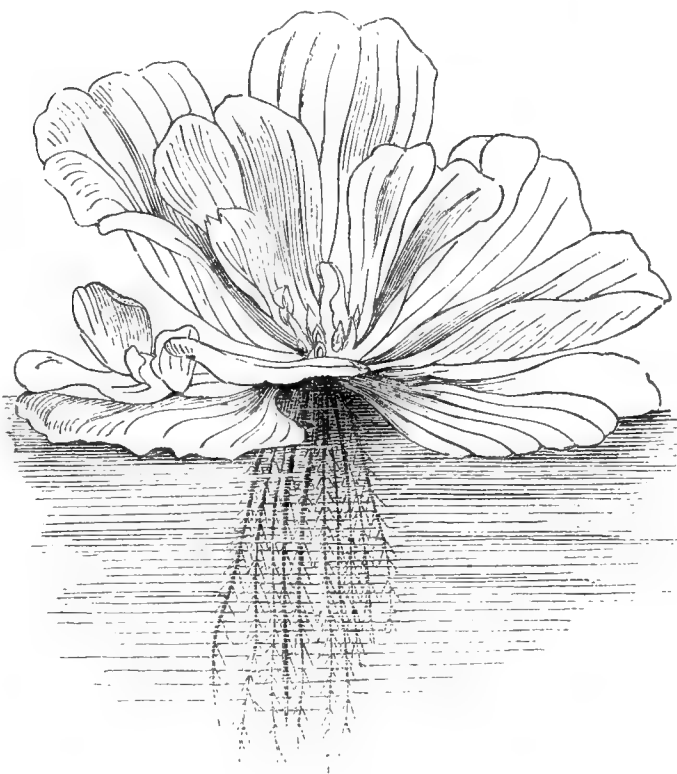
E. Y.

NEW PLANTS.

THEIR PORTRAITS AND BIOGRAPHIES.

WATER-SOLDIER-LIKE PISTIA, OR WATER LETTUCE (*Pistia Stratiotes*).—*Botanical Magazine*, t. 4565.—This genus was named by Linnæus from *pistillum*, the pistil, or female organ of a flower, in allusion to the shape of the spathe, or hollow leaf-like membrane which incloses the flowers, as in *Arum*; and the specific name is derived

from that of another water plant, *Stratiotes*, or Water-Soldier, from *stratos*, an army; the leaves of *Stratiotes*



being shaped like a sword. In the classification of Linnæus, *Pistia* is placed in the twenty-second class *Diœcia*, having the male organs in one flower, and the female in another flower, as in the Melon. Richards founded a natural order, *Pisticeæ*, or *Duckweeds*, on this genus in 1815, which is acknowledged by Enlicher, Lindley, and others. Decandolle, however, turns this order into *Lemnaceæ*. *Pistia Stratiotes* is a tropical, fresh-water, floating plant, frequenting the surface of ponds, tanks, and other still waters; as *Lemna*, or Duckweed, does with us; and now that the flowering of the *Victoria* Water Lily has given a great stimulus to the cultivation of water plants in this country, this addition to the numbers that will soon be subjected to the arts of the British gardener, though amongst the smallest, is certainly not the least interesting either as an object of botanical science, or as covering the surface of a corner of the water-tank in which the more conspicuous water-plants are cultivated.

In Jamaica, this *Pistia* grows in water-tanks to such an extent as to impregnate the water with its acrid principle so much, that it is very dangerous to use the water in hot, dry weather, as has been stated by Patrick Brown, the Irish botanist, who wrote the natural history of the island. Sir W. Hooker very justly observes, that although this plant has no floral beauty to recommend it, yet a more graceful object floating on the water, clothed in the tenderest green imaginable, cannot well be seen. It is in beauty throughout summer and autumn; and, with a little care, plenty of young plants may be preserved until the following spring, when they revive, and produce off-sets.

Roots, if they are entitled to the name, long and feathery. *Leaves* from two to five inches long, slightly concave in the middle, but bent back at the edge, wedge-shaped, most delicate pea-green, velvety to the touch, and mealy beneath. The *flowers* are a mere green scale at the base of the inner leaves, containing a club or spadix, as in the *Arum*, crowned with a circle of five anthers. Beneath this scale is another, round and two-cleft, containing the seed-vessel, crowned with one pistil.

SPOTTED HYDROMESTUS (*Hydromestus maculatus*).—

Botanical Magazine, t. 4556.—This is one of a group of genera of *Acanthads*, which have been named by dif-



ferent botanists, but on whose validity some doubts have been raised by late systematists—as Enlicher and Lindley. The present genus, *Hydromestus*, originated with a German botanist, named Scheidweiler, and is from *hydor*, water, and *mestos*, full, in allusion to the power which the imbricated bracts have of holding water. Here and there we find *Acanthads* furnishing objects of great beauty and interest to gardeners—as in *Thunbergias*, *Justicias*, *Aphelandras*, *Eranthemums*, and others—but the great mass of the order, comprehended in a few more than a hundred genera, and above seven hundred species, are little better than tropical weeds, where they are most abundant, and, perhaps, constitute three-fourths of the coarse herbage.

Acanthus mollis itself, on which the order was founded by Jussieu, is the most northern plant of the order, a native of Greece, whose beautiful leaves furnished the type of the noble architectural ornament of the Corinthian capital. This, the classical *Acanthus* of architecture, is almost the only plant of the order to which any medicinal uses have been ascribed. They are all of them of but trivial use to mankind. The Indian species of *Acanthads*, in Dr. Wallich's herbarium, were submitted to Professor Nees Von Esenbeck for arrangement, at the time the labours of Dr. W. were distributed among European botanists, by the East India Company, for Dr. Wallich's great work on the rare plants of India. It was in that work that the first great revision of the order was made, and the limits of sections and genera were investigated, and a natural arrangement of the whole proposed. Since then, Professor Meisner proposed some further improvements in the order; and he truly asserts, that there are few natural orders which still require a very searching investigation more than *Acanthads*.

Hydromestus maculatus is a native of Mexico, and was not spotted on the leaves when grown at Kew, so that the cause of its being called *maculatus* seems to depart in our stoves. It is an evergreen undershrub, with cylindrical, purplish branches, having long-stalked leaves in pairs, broadly spear-head-shaped, dark green, and very glossy above, but paler beneath. Flowers, in spikes at the end of each branch; bractes, lapping over each other like the cone of a Fir, but in four rows, and bright yellowish green; corolla, funnel-shaped, yellow; calyx, in five sepals, four of equal size, but

the fifth broader and more blunt; stamens, four, with hairy filaments; style, one. It belongs to the 14-*Didynamia* 2-*Angiospermia*, class and order of the Linnean system.

THE FRUIT-GARDEN.

THE RASPBERRY.—Towards the middle of this month the raspberry requires some little attention, or much of the energies of the plant will be wasted; and the fruit consequently will be inferior both in quantity and quality. It is truly astonishing to witness the perfection to which this fruit may be grown by selecting a proper soil, and by a high course of culture; a fruit, too, which at first sight, from its natural habit and general appearance, might convey the idea of one just emerging from the wild state. But compare a dish of highly cultivated *Fastolfes*, with one of the wild ones gathered from the woods, and observe the difference. It has, indeed, become a noble looking, as well as useful fruit, by the immense improvement effected in kinds as well as culture. One of the first handlings requisite, as far as the branch is concerned, is to thin out superfluous young shoots on the canes, presuming the bushes to be in high culture; for, without this, they will scarcely pay for the attention we claim. This proceeding consists in dis-budding inferior shoots where much crowded, which is sure to occur with robust plants; and these may, where dense branches of shoots exist, have about a third stripped away. Persons, however, must judge for themselves; let no one thin out shoots from plants in a lank condition, as thinning is a most scientific proceeding. We have this week applied a top dressing to our bushes more than two inches thick, composed of half-rotten leaves from the woods; this was done immediately on the heels of a soaking rain, a favourite practice of ours. The suckers springing from the root must also have attention; all that are not wanted for future use should be drawn away, not cut off. This done, little else will be requisite until gathering time.

DOUBLE-BEARING RASPBERRIES.—Such having been cut down to the ground in the spring, will now have produced a multitude of suckers, and these must be well thinned, for this kind, if crowded, will not succeed. It is a very good plan to train them on lines of string, or, what would be far preferable, on wires stretched on posts. These wires being fastened with nuts and screws might be a portable affair; and when the row becomes exhausted, could be readily removed to another site. The stools being about eighteen inches apart in the row, about three fine suckers will be enough for a stool. However, as they do not all show fruit, it is well to reserve four or five at the first thinning; and, in the course of a month or six weeks, it will be seen which are fruitful. Then they may be so thinned finally, as that the shoots may be trained about eight inches apart on the string or wire. In order to sustain the canes well, two horizontal and parallel lines of string or wire will be necessary—the one at about fifteen inches from the soil, and the other at about thirty inches; on these the canes are, of course, tied as they advance in height. Let us strongly advise a good mulching to these, also, as soon as the final thinning of the suckers has been accomplished; for it is impossible to get them too robust after this; and those who can get a little Peruvian guano, will do well to infuse three ounces in each gallon of tepid water, and apply this liberally once or twice during droughts, when the blossoms are unfolding and the fruit swelling.

GOOSEBERRIES.—This seems likely to be an unusual season for heavy crops of this very useful fruit; and it will be well for those who are thus situated, to thin even the dessert kinds for tarts or dumplings. We have before observed, that over-cropping is a most fertile cause

of inferior flavour in fruits; and, indeed, it is one of those points, that in spite of the extraordinary advances made in later years in general gardening (perhaps more than in any other art or science), one of those points, we repeat, which is still but half appreciated. The great drawback to the carrying out to the full the minutiae of modern horticulture, is, doubtless, the amount of labour and incessant application needed. And, indeed, this is not trifling, for gardeners are anything but an idle race. Still, we must in duty point to every thing which has a tendency to the highest cultural points attainable, and leave it to our readers to work out as many as possible.

We shall, doubtless, soon receive a visit from our old foe, the caterpillar, and although many applications have been suggested, yet from their being not only somewhat tedious, but what is much worse, inefficient, as far as we can learn, it would appear that there is nothing better than shaking and handpicking. Two persons, one on each side of the bush, each having a piece of ordinary coarse cloth, equal in size to at least half the diameter of the bush, and each provided with a hooked stick, will soon make a clever job of some scores of trees. Each person, of course, spreads his cloth, and shakes his side, and the contents are collected by each, and deposited in some vessel. This should, like the Aphides case, receive attention the moment the rogues appear, and will need repeating at intervals. Gooseberries on trellises, for late purposes, will require some little disbudding like other trained trees; but as they will occasionally produce very nice fruit on spurs, it will be well to pinch back many shoots instead of disbudding; this, of course, depends on the amount of shade they create. The gooseberry, like all other fruits in a state of training, requires an equalised amount of light; and just in proportion as this is afforded, and a healthy surface of foliage maintained, so will be the quality and fineness of the fruit.

THE WHITE AND RED CURRANT.—We must again advert to the watery or succulent "breast-wood," which in healthy bushes will be apt to become unwieldy by the end of the month. There is as much need to pinch or stop this as vine spray. Some persons will say, why did Nature furnish this, if to be pruned away? But the same question may be put concerning all other artistic proceedings. The fact is, that Nature, aiming at little more than the perpetuation of the species, affords, under ordinary conditions, no more sap than is just necessary to develop a small annual growth; enough to fulfil, through increased elaboratory powers, the immediate, as well as the perspective powers of the bush or tree. But man requires something more. He has ascertained, that although he cannot, perhaps, increase the number of seeds in any given fruit, he can, by high culture, much enhance both the quantity and the quality of the pulp; to effect which, he is obliged to have recourse to stimuli unknown to trees or branches in a state of nature. For, however much such may be annually refreshed in the forest by an annual deposit of vegetable remains, their conquerors of the garden have the immense advantage of a well-stirred soil, and such, moreover, generally of greater depth, with the addition of animal manure. Such, then, exhibits a reason why so much handling is requisite in a garden, where the highest cultural point is sought to be carried. Indeed, look at our exhibition tables in these days. Can any one doubt the vast range afforded to the intelligent mind of man, by our gracious Creator, in the vegetable kingdom, both as regards cultural matters, and the advance by hybridisation; to both of which no living man can assign fixed limits? To go back to the currants. Let all side spray of a free growing character be pinched, or dubbed back, as soon as some four or five inches in length, taking care to have plenty of leaves at their bases to screen the fruit; for, however much the latter may be improved in

flavour by a total removal of shade at the eleventh hour, there is not a shadow of doubt that the tender fruit of the currant, like the grape vine, shrinks from the burning glare of a Midsummer's sun. The points of the shoots, too, may be shortened by some means; but as Nature abhors too much of man's meddling at one stroke, we must be content to "catch her with guile." Therefore we say, dub in the breast shoots betimes, and top the leaders about a fortnight after; by which period there will have taken place a re-adjustment of matters, and a fresh economy in the flow of the sap.

THE BLACK CURRANT.—Whilst on the subject of currants, we may as well turn our attention, for a moment, to the black currant, which, although not precisely fit to rank amongst the aristocrats of Pomona, is yet exceedingly useful to thousands, and as wholesome as it is useful. Two points connected with high culture must by no means be lost sight of at this very period; viz. the extirpation of the Aphides, and the liberal application of moisture at the root whilst the berries are swelling. To favour the retention of the latter some mulching should by all means be applied. We are using tree leaves principally, for dung is a scarce article; however, three inches in thickness of half-rotten leaves are pretty efficient; and these, by the autumn, become a complete network of fibres. If a dry period should supervene any time during the swelling of the fruit, they should by all means be watered; not in a dribbling way, but a thorough drenching; and the soapsuds of the laundry may be added. Especially let them be kept moist when just out of blossom; it is at that period that the fly commences his attack, and drought favours much his advances; doubtless by rendering the secretions of the plant of higher quality through a less vigorous absorption. The mixture advised for the peach wall will serve to repel or exterminate the invader.

R. ERRINGTON.

THE FLOWER-GARDEN.

I have been very much interested by the letter of L. M. N. at page 55, and I perfectly agree with him on the effects of a damp mild winter on half-hardy plants. Damp is certainly more destructive among such things than frost under 10°, with a dry atmosphere. The effects of a comparatively mild March on growth, in the absence of sunlight, we have just witnessed. A dry, *very cold* March, with the sun out every day, would have the same effect in retarding vegetation. But from a long course of experiments carried on annually for the last twenty years, I am led to believe that fruit blossoms, and all blossoms, will set better and more regularly in the absence of strong sunlight, *if the atmosphere is dry*, than they do in such weather as we have seen this last March, and the first part of April, if accompanied by sunlight. If we had strong sunlight, and warm nights, with the amount of rain which fell this March, I believe the blossoms would have fared worse than they have done, and L. M. N. has not overrated the extent of the mischief or misfortune done to the blossom of our fruit trees. The reasons for such a state of things are not at all obscure, or difficult of comprehension. Indeed, I intended, this month, to explain the effects of the principle on which these observations are founded, before I read L. M. N.'s letter. A check on vegetation at the flowering period is *not* inimical to the fertilization, or setting, of blossoms, but exactly the reverse. Physiologists have never yet discussed this simple question so much as it deserves; but, on whatever principle it may be accounted for, of the fact itself I am as confident as I am of my own existence, for I have, over and over again, taken advantage of the principle at the moment a plant was in bloom to obtain seeds from it, after having failed

to do so by any other means; and I have thus seeded a few plants which are counted as absolutely barren in our books, and by the best breeders. How is it that an over luxuriant tree, not a bad setter, after producing a full compliment of blossoms, sets badly? The true answer to this question would explain how I, by giving a sudden check at this time to a supposed barren plant, obtained seeds from it. Our March blossoms had such a check at the proper time this spring, and failed so far—therefore, a sudden check at the right time will not *alone* effect a setting of the blossoms, it must be accompanied by a dry state of the atmosphere. It was the continued wet and mugginess of the atmosphere which deranged the setting of the blossoms. The pollen dust which causes this setting is as dry as tinder, and as small as anything can be; rain or damp makes it no better than a paste, and a strong wind playing among the trees in blossom cannot disperse it. Bees were busy among the blossoms as often as they could be this spring, but they too failed in scattering all the blossoms; and it would be interesting to know if they were enabled to make use of the damp flour or pollen, this season, for their side panniers, which they carry home on their thighs.

Now, what I wish to effect in reference to this peculiarity in a large division of the vegetable kingdom, and to take advantage of it for the flower-garden, is to induce, if possible, an increased interest in the production of superior varieties of flowers from plants now supposed to be altogether barren. I have done so myself repeatedly; and as far back as fourteen years ago, I hinted the same doctrine in Loudon's *Gardeners' Magazine*, in an article on cross breeding, suggested by Dr. Herbert's large work on bulbs. Before that time the principal field for my experiments in crossing, or in setting flowers without crossing them, was among bulbs, and with them and their kindred vegetation (*Endogens*), the more vigorous they are at the time of flowering, the more sure they are to seed, and the easier to force them to make seeds if they are lazy to do so under cultivation. But in getting to the next field (*Exogens*), and applying the same rules as with bulbs, I was baffled at every step; that is, in every step where some difficulty existed about getting a plant to seed at all. The doctrine I then broached in the *Gardeners' Magazine* was in these words: "Whatever process may be found applicable for the production of seeds (in different cases) in *Endogens*, I apprehend the converse will be a sure guide for *Exogens*. The former may, probably, require an excess of development so to speak; the latter *an over exertion of their vegetative powers*." An obscure phrase, certainly, but it means this: to make them fruitful, stimulate *Endogens*, to which bulbs belong, but stint *Exogens* at the time of flowering. Now from that day to this, I have tried experiments both ways every year, without meeting with a single instance to controvert this doctrine. Then let us suppose that we have two plants from which we desire to obtain a cross seedling; both of them being very shy to seed even by their own pollen, and more so by the pollen of each other, if they are bulbs, or belong to that division of plants now called *Endogens*, but formerly *Monocotyledons*; if there is any way of overcoming their unwillingness to seed, it is by a strong stimulus, such as better soil, more of strong water, and increased moist heat. On the other hand, if they are *Exogens*, as Geraniums, Fuschias, Honeysuckles, Clematis, or any of our hardy fruit trees, a sudden check as they are coming into flower is the surest way to catch them in the humour of uniting "for better, for worse." All our best bedding Geraniums are unfortunately very shy to seed; *Lady Mary Fox*, *Diadematum Unique*, *Quercifolium*, *Sidonia*, *Pink ivy-leaf*, *Mangle's variegated*, and many others, under ordinary good culture, never produce a seed, but some of them are not quite barren,

nevertheless; and as each of them belongs to a different section of the family, and, perhaps, the best in those sections, it would be quite a triumph to get them to produce seeds. I have obtained a seedling from *Diadematum*, and only one, but it is the very best of all the reddish ones, and I call it *Diadematum regium*, making the fourth *Diadematum*,—*rubescens* and *bicolor*, with the old *Diadematum*, being the other three. Of all the variegated Geraniums, taking in the *Golden Chair* and *Flower of the Day*, *Mangle's variegated* is by far the best for general use. I have been striving these ten years to get it to seed under all kinds of experiments, and I have just succeeded. Last year I seeded two plants of it, but a great loggerheaded fellow, who was trimming the border, cut off one of the seed stalks, the only one on that plant, long before the seeds were half ripe. From the second plant I got three seeds, two of which are up, and one of them is variegated. If this one turns out a breeder, I shall forget all the time and trouble, and forgive the big man who deprived me of a double chance.

Now as to the ways of stinting such plants to cause them to seed. If they are in pots, let them get pot-bound, so much so, that there will hardly be anything in the pot but roots. A pot four or five inches in diameter will sustain a plant of any of these Geraniums seven or eight years—perhaps double the time; that is one way. When the flower-buds are ready to open, withhold water till the leaves flag down, then water, and let the leaves droop a second, and a third time, and as long afterwards as the plant keeps in bloom. A north window in a dwelling-house is the best place for this, the second best experiment; and the third, is to plant out your shy breeder full in the sun, in the open ground, some cold day about the end of this month; let the ball be kept entire, and be rather dry at the time, and if the border is moist, the plant will take no harm for three weeks, and in that time, and all through June, keep dusting it with its own, or with the pollen of another sort. I am of opinion that the kind of treatment given for the three previous years has some influence on these experiments; but of this I am not quite sure. Of the starving system I am quite certain. The only cross-breed plant from the *Scarlet Currant* that has yet appeared, was obtained by the writer fifteen years since. A great many experiments on that plant during the previous five years failed, and the way I succeeded at last, was by transplanting at the moment the first few flowers opened, the roots being so severely handled, that I had to screen the plant from the sun for three weeks, and water it regularly all the time. It was from that experiment, and two others like it, that I then combated a general opinion, which was even entertained by Dr. Herbert, the best and most scientific cross-breeder that ever lived, that well-feeding a plant all the time the seeds were ripening, would have influence on the seedlings themselves; a very plausible, but a most erroneous theory which has no foundation in fact. I never crossed a *Ribes* since; but it is very strange that no one has taken up the *Ribes* family to cross from. If I was a young man beginning the world, I could make a fortune out of that one single genus, and so I could from apples, pears, cherries, plums, and, indeed, all our hardy fruits, for I am quite convinced that all that philosophy has advanced on the subject of improving our fruits is entirely wrong. I am equally certain that no one has yet explained how to cross Wheat, Barley, and Oats, or, indeed, any of the grasses; all of them are *Endogens*, and, although I never attempted to cross any of them, I am almost sure, to make the best of them, they must be over-fed previously to their time of flowering, if, indeed, we allow them to have flowers at all. Farmers, and writers on agriculture, talk and write about their wheat being in flower at such and such times, but I very much

question if there is a farmer living who ever saw a wheat plant in flower. By a merciful Providence the wheat is made to flower *in the sheath*, so as to be independent of the influence of the season. No matter what kind of weather it is, it cannot hurt or hinder the setting of the wheat seed in the least degree. The male and female organs of the wheat plant are as pretty as those of any plant I know, under the microscope. The female being much after the likeness of a plume of ostrich's feathers at the time of the impregnation. The anthers, or pollen bags, might be said to be sessile at that period, that is, having no stamens to support them. The wonderful process of fertilization having been effected in complete darkness in the middle of the sheath, and the husks being closely jammed together, if the pollen bags or anthers were to remain after discharging their contents they would rot or damp, and injure the plume-like style, and we should have no wheat. But here the wonderful contrivance of the Deity becomes still more manifest, for it is not enough to guard the setting of the seed against the influence of the seasons, that man may have food for the body; but a process, contrary to the usual law of vegetable development, now takes place to insure the safety of the newly fertilized organ. The stamens now begin to lengthen, carrying up the empty anthers, indeed pushing them up between the husks, till at last they reach the outside of the ear, and hang down in little white specks from the slender threads, or stamens, now two or two and a half inches long, and if the weather is dry at the time, the farmer congratulates himself on a favourable time whilst his wheat is in blossom! just about fourteen days after the fertilizing process is over!!

D. BEATON.

THE ROSARY.

WATERING.—“Driving coals to Newcastle” is generally looked upon as labour ill-directed, something similar to the attempt to increase the size of the ocean by carrying water to it in pails. There has been more than enough of watering from the heavens in various parts of the country; and those who had rich mulchings on their rose beds may congratulate themselves that the roots will have received such a supply of fluids, that the flower-buds will swell, and the flowers open full-sized and vigorous. As soon as the weather becomes drier and warmer, even in their case, a watering with liquid manure, a fortnight or eight days' hence, would be attended with the best effects. Where no rich mulching has been imparted, these liquid manure waterings are invaluable, and absolutely essential, to produce vigour of plant, and fulness and perfection of bloom. Where the strong drainings from a farmyard can be obtained, I mean a yard supplied with spoutings to the building, and where the liquid manure consists merely of the water that oozes through the dung in the centre of the yard, the result of the rain that falls upon it—that would be the thing. If the liquid tank consists almost entirely of the urine of animals, then two parts of water should be added to one of *liquid* manure. When none of these means exist, the liquid manure may easily be manufactured in any old barrels. A barrowfull of cow or other dung, two or three spadefull of soot, and half a spadefull of quick lime, will make a hogshead of liquid manure; and so applied will have far more influence in imparting vigour to the plants, than digging six times the quantity of manure about their roots. I have said “any other dung,” but I find manures of a cooling nature suit the rose best in most situations. The greatest demand upon the plants takes place from the breaking of the buds in spring, to the full expansion of the flower-buds in summer, and liquid manure nourishes the plants at once, at the very time when nourishment is most required.

R. FISH.

GREENHOUSE AND WINDOW GARDENING.

HARDIER GREENHOUSE PLANTS.—I have several times alluded to the different treatment required between a conservatory and a greenhouse, and the greater amount of pleasure to be derived from an amateur treating his small planthouse as a greenhouse, and not as a conservatory. That additional pleasure is derived chiefly from the ease with which the usual inhabitants may be grouped in fresh combinations, so as to present individual plants in different aspects; as well as the means which are readily afforded for introducing into prominent notice new plants in bloom,—giving more room, better attention, and a superior position with regard to light and shade,—plenty or little air to plants growing freely, and designed for future ornament, and removing altogether from the house those plants which have finished flowering, which is indispensable, if the greenhouse is to be beautiful in summer, and not overcrowded. Taking this into consideration, the usefulness of some *secondary* structure in the shape of a pit or frame, or even of a sheltered corner covered in with mats, or, better still, with glazed waterproof calico, is indispensable when it is desired to have the greenhouse at all times a *scene* of luxuriance and beauty. Where there is only one structure, many things must be kept there when they are past their best; and many, too, must be regularly attended to that possess little interest, unless when they are showing *for*, and *in*, bloom.

Hence, not only among amateurs, but among professional men, there is often a great difficulty experienced in keeping a greenhouse gay at all times, and yet attending to the interests of those plants which have yielded good service, and which will be required to perform a similar duty the following season. The straggling heads and the whip-handle-drawn-up-like stems of many good, old useful plants are entirely owing to this and the want of acting on the principle, that with most of our useful winter and spring flowering plants a *period of growth*, and of *ripening* the wood, must follow the last flowering, and precede the next. Unless by these means strong flower-buds are formed, it is vain to expect fine or abundant blossoms. A person who thought much of some *Azaleas*, with a stray flower peeping here and there, candidly expressed his opinion, that the fewness of the blossoms must be owing to the peculiar nature of the season; for he had done everything that could be done to them; had forced them in the most approved manner, and still the flowers would not come. He seemed quite sceptical that large plants of *Azaleas* had been carpeted with bloom since Christmas, and had received no forcing at all for a number of years. The fact was that our friend's *Azaleas* had no flower-buds on them to open, and the result would have been precisely the same, forcing or no forcing. If a little attention has been given to what has been stated by all the writers of this work, respecting the difference between the growing and flowering principle—if many of the articles in the hardy fruit department have been carefully studied, our readers will at once perceive, that though luxuriance and free flowering, in general, are opposed to each other, yet, in a flowering plant, there must be a combination of both to present the most pleasing effect. By root-pruning, Mr. Errington would be able to present you with a minute Pear-tree in the shape of a fair-sized bush, and covered with blossom; but if that specimen produced nothing better than half-sized gritty pears, he would consider that his experiment had failed; and, therefore, while he curbs luxuriance so as to promote fertility, he still encourages it so far as that the specimens produced may be full sized, and fully up to the mark in consistence and flavour. Just so with a flowering plant; you may cause it to grow in a position and an atmos-

phere from which the consolidating influences of sun and air are excluded, comparatively speaking, and the plant in the following season will just be in as good a situation for growing (not flowering) as before.

On the other hand, the plant may be so curbed in the pot, so deprived of water, so placed in an open situation in the house, and then so placed in the sun out of doors, that scarcely any growth at all will take place; or the little that does will be immediately stored up as flower-buds, upon the principle applicable to all organised existence, that in the period of weakness and extremity Nature puts forth an *extra last* effort to preserve the race. In such a case we may have plenty of flowers, but they will be small, and destitute of the background of a luxuriant green foliage. In general cases, therefore, we do not wish to do away with luxuriance altogether; what is more wished is, the *directing* of it into numerous channels, and in each of these having the juices highly organised; or in other words, having the wood well ripened. The finer and larger the specimen, if the flowers are large and well set in proportion, the more beautiful will be the object, and the higher the merit in producing it. The stopping of a too strong shoot, therefore, as soon as it presents itself, will not only equalise the luxuriance by obtaining several shoots instead of one, but you obtain a closer headed plant, and a denser mass of bloom, provided you do not stop these strong shoots so late as to prevent the side shoots thrown out being well ripened. Thus, in the case of Azaleas and Camellias, any pruning required should be given *immediately* after flowering, and any stopping of shoots as soon as these are from one to two inches in length.

Now, in the case of having only one house, and with little of the make-shift conveniences alluded to, united with the prevalent desire to see the house gay at all times, many of the winter and spring flowering things must be removed, as soon as their beauty is over, to give space for Calceolarias, Geraniums, Fuchsias, and later Cinerarias. But though some of these plants to be removed would stand in a sheltered corner in the garden, such as Genista and Cytisus, and those Acacia which are fitted for greenhouse culture, (the most of which, however, with the exception of such as are indicated in the *Cottage Gardener's Dictionary*, including the Golden-flowered Armosa, being better fitted for conservatory, and conservative wall culture, than for greenhouses), still even they would do much better, if kept for a time under glass, pruned when done flowering, and encouraged before turning out; while such treatment is indispensable in all cases where early luxuriant flowering can only take place after healthy growth, as in the case of *Azaleas* and *Camellias*, *Daphnes* and the splendid family of *Epacris*, &c. If a *Cytisus*, or an *Acacia* should be placed in a shady, sheltered corner, protected alike from a scorching and withering east wind, and gradually, but *ultimately*, fully exposed, there will be a sufficient time for them to make their growth, and to perfect that growth, before housing them in the end of autumn. In many of our cottage *ornées* there are nice open verandas, with the fruit supported by pilasters, graced by creepers. I have no desire of seeing verandas, as they often are, *lumbered* up with a miscellaneous, higgledy-piggledy collection of plants in pots of all sizes and dimensions; but failing a better place, the back of such verandas constitutes a good intermediate position for plants that are to be brought from the house into the open air. Everything like a sudden change ought to be avoided; no galloping at once from heat to cold, from shade to unobstructed sunshine. Hence, when such plants are placed in the shade at first, as at the back of the veranda, they must be gradually brought forward, until they are able to bear the light with impunity. Winter-flowering heaths, *Epacris*, *Camellias*, and *Azaleas*, may be treated in the same

manner; but the flowers must not be expected so early; and even then they will not be nearly so fine, as if the plants, after being pruned, had been kept rather close and warm until free growth was advancing; and air then admitted gradually, until by the end of summer the lights were totally withdrawn, and the autumn sun allowed to perfect the flower buds, putting the sashes on again as the nights got cold, and as a protection from heavy rains. After this period of growth, such plants might stand in the front of such a veranda, as they would have the full benefit of *light*, and escape the injury of being soddened with wet. Mind we recommend such a place as a matter of economy and emergency, not as a matter of taste; for if plants are to be kept in such places at all, even in the way of ornament, we would, if we had our way, have them grouped in vases and baskets. True, many turn all such plants, at this season of the year, to the back of a north wall at once, and unless, in extreme cases, they are allowed to remain there until they are taken in in the autumn—a rusted weather-beaten sample, with an appearance of growth, speaking as much of downward as upward progression. True, again, such plants will bloom; for we have had such plants in flower in spring, that had merely the protection of the branches of a deciduous tree in a moderate winter. But the flowers of the *Azaleas* will be small, and accompanied merely by the semblance of foliage, the plant being more like a deciduous than an evergreen shrub; though, under the best treatment, it is apt to lose some foliage in winter; and the flowers of the *Epacris* will stand solitarily on the points of stunted half-inch shoots, instead of those brilliant racemes of bloom that fit them so well for the centre of nosegays and decorative wreaths of flowers. In all cases, therefore, where superior appearance, as respects luxuriance and abundant flowering next season, are concerned, our greenhouse plants must not be unceremoniously turned out in the open air in May and June; but treated in such a manner as not to give them a sudden check, but to secure, first a period of growth, and then of ripening the wood, before finally housing them again in the autumn. R. FISH.

HOTHOUSE DEPARTMENT.

EXOTIC ORCHIDACEÆ.

EXOTIC ORCHIDS THAT THRIVE WELL IN POTS.

(Continued from page 74.)

MILTONIA CANDIDA (White-lipped M.); Brazil.—Sepals and petals yellow, spotted and lined with chocolate colour; lip pure white, curled at the edges. In the centre it has a beautiful patch of violet. This is truly a splendid plant. 31s. 6d.

M. CANDIDA *var* GRANDIFLORA (Large-flowered variety).—Sepals and petals rich dark brown, with a large blotch of yellow at the ends; lip a brilliant white. This is a beautiful variety of a fine species; the flowers are much larger. Very fine, but scarce. 63s.

M. CLOWESII (Mr. Clowes's M.); Brazil.—Sepals and petals pale yellow, with broad blotches of chocolate colour; lip light purple, with a blotch of white at the end. There is a variety with all the colours much darker. Mr. Wanklyn, of Campsall House, near Manchester, first imported this species of *Miltonia*; amongst them was a variety with a lip of rich purple. We remember seeing it in bloom, but we fear it is lost to the country. The species is a fine plant of easy culture, and a free bloomer. 31s. 6d.

M. CUNEATA (Wedge-lipped M.); South America.—The upper part of sepals and petals pale yellow, the lower part brownish purple; lip white, with a shade of rose colour at the base. One of the finest of the genus; a strong-grower and free-bloomer. 42s.

M. FLAVESCENS (Straw-coloured M.); Brazil.—Sepals and petals pale yellow; lip the same, colour spotted with pale red. The flower-stems rise to the height of $1\frac{1}{2}$ foot; the flowers are produced on it in a regular style, forming a handsome spike. A pretty species, requiring to be a considerable size before it flowers. 31s. 6d.

M. KARWINSKII (Baron Karwinsk's M.); Brazil.—Sepals and petals pale yellow ground, broadly barred with rich brown; lip white, spotted and blotched with chocolate. The flowers are large, three inches across, produced on long upright stems much branched. The pseudo-bulbs are shorter than any other species; they are, also, more deeply furrowed. The rest of the genus being remarkable for the perfect smoothness of their pseudo-bulbs. This species first flowered in the orchid house at the Horticultural Society's gardens at Chiswick. It is the most splendid of the whole genus. 84s.

M. SPECTABILIS (Showy M.); Brazil.—Sepals and petals dull white, short and inconspicuous; the lip, on the contrary, is large and showy, of a violet hue towards the base, becoming paler towards the margin, till it becomes almost white at the extreme edge. A beautiful species. 21s.

M. SPECTABILIS var *BICOLOR* (Two-coloured variety); Brazil.—This is a pretty variety, with the colours on the lip more distinctly defined; the spot is a deeper colour, and the margin a clearer white. The lip is, also, a degree smaller. As equally ornamental as the species. 21s.

M. SPECTABILIS var *ATROPURPUREA* (Dark purple variety); Rio Janiero.—Sepals and petals purple, and larger than in the species; lip very dark purple shaded with a lighter purple, very large and broad. Lately introduced, and a very fine variety. It is sometimes named *M. Morelliana*. Peculiarly richly coloured and very beautiful, but rather scarce. 63s.

Culture.—There is no other genus amongst the whole tribe of orchids that is more worthy of culture than *Miltonia*. Unlike many of the tribe, the species form ornamental plants even when out of bloom, and when in flower tolerable good specimens are really splendid.

Compost.—Rough pieces of peat mixed with chopped sphagnum, broken potsherds, and pieces of charcoal. In this mixture they will thrive well. The pots must be well drained by being, at least, half full of broken potsherds. In potting keep the plants only just raised above the rim of the pots. *Miltonia spectabilis* and its varieties are, if badly drained or subjected to too much light, apt to turn yellow. This is partly owing to imperfect drainage, too much light, and too little fresh air. The colour of the pseudo-bulbs and leaves, not only of this particular species, but of all the inhabitants of the orchid house, may be greatly improved, if the vapour arising from *carbonate of ammonia* be thrown into the house once a week. This may be accomplished in two ways. First, rub the ammonia on the hot pipes; if the house be large it will take two ounces, and a lesser quantity in proportion. Secondly, dissolve the same quantity suitable for the size of the house in warm water, and sprinkle the pipes with it, using the whole quantity at once, and as quickly as possible. The olfactory organs will immediately detect a strong odour, similar to that felt when near to a heap of dung in a state of lively fermentation. This has been repeatedly proved to be highly beneficial to this tribe of plants.

Heat.—*Miltonias* being natives of the woods of Brazil, in the lower regions of that country, require more heat than those we have distinguished as being proper to grow in a separate house from the natives of India. The cooler end of that house will be a situation similar to that of their native locality in respect to heat. Day temperature in summer 75° to 80° , night 65° . In winter, or the resting season, by day 60° , by night 55° .

Moisture at the Root.—When the plants are growing they should be watered at the root freely, giving it when-

ever the surface appears dry. The greatest quantity must be applied when the pseudo-bulbs are about half-grown. After they are fully grown it must be gradually lessened, both in quantity and frequency of application, till the resting season commences, which should be so ordered as to take place during the shortest days. No more water should then be given at the root, unless the pseudo-bulbs appear to shrink very much, when a little may be given to keep them plump and fresh. This must, however, be very carefully applied, or it will not only rot the roots, but have a tendency to start the plants into a too early growth, and so prevent them flowering.

Moisture in the Air.—These plants, like all the rest of the tribe, require, when growing, a very damp atmosphere. This may be given by keeping the walk almost constantly flooded during the day, by wetting the pipes frequently, and by syringing the walls, blocks, and plants once a day in the spring, and twice a-day in the hot days of summer.

Air will be necessary to give during hot weather, to lower the temperature of the house. The aperture to admit it should be so placed as not to allow the draught of cold air to pass over the plants.

Shade.—It was hinted above, that these plants will not bear so much light or sunshine as some others of the tribe. Mr. Bateman's rule is an excellent one—"The plants can hardly have too much light or too little sun." This rule applies to the thick-leaved *Aerides*, and the like, and, therefore, applies with still greater force to the thinner-leaved ones, like those of our present subject. Shade them, then, whenever the sun shines; but have the shade so contrived that it can be easily drawn up when the sun is overclouded. In winter, of course, no shade will be needed.

Period of Growth.—This should continue from March to September. The *period of rest* will be the remainder of the year.

MORMODES ATROPURPUREA (Dark Purple-flowered M.); Spanish Main. The flowers are of a rich deep purple ground, barred and spotted with red. A pretty, curious species. 31s. 6d.

M. BUCCINATOR (Trumpet M.); S. America. Sepals and petals yellowish green; lip white, like ivory, and rolled up so as to form the shape of a trumpet, hence its specific name. A very handsome species, with large pseudo bulbs. 42s.

M. LINIATUM (Striped); Guatemala. Sepals and petals yellow ground, thickly striped with chocolate crimson; lip white, spotted and streaked with pink. A very curious species, emitting a delicious perfume; easy to grow, and requiring only the temperature of a common stove. 21s.

M. LUXATUM (Dislocated M.); Mexico. Sepals and petals pale yellow or straw colour, very clear and bright; the lip is the same colour, with a deep brown stripe down the centre. The flowers are large, nearly three inches across, and emit a most delicious fragrance. A stately species, the leaves often reaching two and a half feet high, and are of a beautiful hoary green. 42s.

M. PARDINA (Panther-like M.); Mexico. The whole of the flower is of a rich yellow ground, thickly blotched, and lined with deep chocolate red. The flower-stems spring from near the top of the large pseudo bulbs. The flowers are thickly set upon them, and are of a curious twisted appearance. 31s. 6d.

Culture.—This curious yet handsome genus is not difficult to cultivate. The compost it thrives in is of a very open texture, formed with rough peices of turfy peat, mixed with pieces of charcoal as large as a walnut, with a small portion of half-rotted leaf-mould added. The plants should be rather elevated in the centre of the pots, as the young shoots are very impatient of moisture. Excepting *M. liniatum*, they require, when growing, a high temperature, 70° to 80° by day and

65° by night. When at rest, 60° by day and 55° by night.

Time of Potting.—This should be done whenever the young shoots are observed beginning to appear at the base of the old pseudo bulbs. This generally happens when the length and heat of the day increase in spring. Whenever this is observed, let them be potted immediately. As we remarked above, these plants are soon injured by excess of water lodging about the young shoots; to prevent this, in a great measure, let them be extra well drained. With the few additional points added, treat the *Mormodes* exactly in the manner described for *Miltonias*.

T. APPLEBY.

FLORISTS' FLOWERS.

CALCEOLARIAS.—These charming flowers will now be progressing rapidly. They require considerable attention to keep them healthy. In the morning give air if the weather is mild, and with a syringe wet the outside of the pots and the stages on which they stand; this prevents a too dry atmosphere, a state very injurious to these delicate plants. Such as are intended for exhibition in the latter part of June, should have sticks put to them to tie the rising flower stems to. They require a pretty liberal supply of water at the root. Allow them to become moderately dry, and then give a thorough good watering, so as to completely wet the whole of the soil in the pot. Look after the green fly, and as soon as three are observed alive, smoke the house, filling it so full of smoke as completely to hide the plants from the eye. Do this two nights in succession, which will quite extirpate this pest. *Calceolarias* to be exhibited towards the middle of July should not be permitted to send up their flower-stems till the third week in May. The plants must, however, be encouraged to keep growing by repotting them, and occasionally giving them a weak liquid manure.

CINERARIAS should now be in their greatest beauty, except such as are intended to be kept back to flower late. Seedlings should be marked and described in the garden book, so as to know which to keep and increase.

TULIPS should still be protected from cold winds by awnings. If the collection is large, a tent, the size of two beds, with a walk down the centre, forms a beautiful promenade, and shelters the flowers from cold, wet, and the colour-dispelling rays of the sun.

T. APPLEBY.

THE KITCHEN-GARDEN.

ROUTINE WORK.—Encourage the growth of the *Globe Artichokes* by liberal applications of liquid manure. Fork over the ridged ground between the *Jerusalem Artichokes*, and observe, when they are up in full row, that there are not too many shoots left to each plant;

pull off the weak ones, and eradicate the self-planted or those that have been left in the ground. Encourage the growth of *Asparagus* in every stage at this season, and maintain a loose open surface; the general recommendation is to keep it clear from weeds, but our maxim and practice is—never at any season to give the weeds a chance of making their appearance among plants or crops of any kind. Those who are partial to weeds, or our native plants, had better devote a corner to their culture separately, and do justice to them by thinning out and preventing their encroachment on their neighbours, for there can be no doubt that everything is sent to be good for some purpose or the other; so we say by the rats, they may be pretty useful as scavengers, &c., but where allowed to go at large to any extent they take too many liberties with things wherein their interference could be very well dispensed with; those who are partial to such animals should, therefore, keep them within bounds, or under some kind of control. We find, in a large establishment, but little difficulty in these matters, and get quit of such company very readily.

Hand hoe *Onions*, *Carrots*, *Parsnips*, *Parsley*, *Beet*, and every kind of drilled crop. The first thinning should be performed with a two or three-inch hoe, on the goose or crane-necked principle, one in each hand, cutting the surface of the soil shallow, and leaving the plants singly, cutting right and left, and leaving no doubles, clearing a good width quickly, and stepping out wide and lightly, so as not to trample every inch of the surface over; our system is to leave all the surface loose, without a footmark to be seen. Take care in filling up all vacancies to lift the plants carefully with all their roots.

FRAMING.—This being a season with amateurs, &c., for putting out *Melons* to some extent, those who have lights to spare from cauliflowers, carrots, potatoes, radishes, &c., will find nothing more required than a slight hotbed of well-worked materials, and the frame wrapped up round the outside with rubbish of some kind. A good ridge of sweet, kindly-holding soil of some kind, without *any* manure, must also be added. We never add manure to the melon soil until the fruit is set, and we have always found the plan answer remarkably well; in the first place they do not get into a rank, luxuriant, unfruitful condition, but almost every variety that we have ever grown on this principle is of a short-jointed, fruitful habit. We are particular, whilst the fruit is setting, to keep the structure pretty dry, shutting up early, and giving some air early in the morning. As soon as the fruit is fairly set, we commence by applying weak tepid manure water, and increase its strength as the fruit swells larger, withholding it altogether as soon as the fruit is full grown, and airing very liberally both early and late. Upon this principle we always have immense crops of fine, well-swelled handsome, and fine flavoured fruit. JAMES BARNES.

MISCELLANEOUS INFORMATION.

OUR VILLAGERS.

By the Authoress of "My Flowers," &c.

It is very sad though salutary to observe the rapid progress to ruin which takes place when men forsake their duty to God, and go on in their own wickedness. We see, constantly, people whom we know are not *really* religious who yet keep up religious appearances; they observe the Sabbath and attend the public worship of God, and may go so far as to do "many things," like Herod. These outward appearances do not deceive the Searcher of hearts; He knows what is in man, and He can see, though we cannot, the spring from which all actions flow. But there is a "reward" even to outward decency, although it extends not

beyond the grave; there is a respectability in the eyes of man, and a measure of worldly prosperity, that is gratifying to the heart of the natural man, and is not always the portion of the real people of God, who, in many cases, suffer want, and make but little show in outward things. It is striking to notice how immediately outward prosperity seems to wither, when even this "eye service" is set aside. The reward for which they have served is taken from them, and when they are stripped of their worldly treasure, there are no "bags which wax not old" laid up for them in heaven.

James Wiltshire lived for nearly twenty years in a gentleman's family, as butler, with great credit and respectability. On his master's death, he entered service again with a very high character, and for some years retained his situation quietly and comfortably, and was much regarded, because his attention to his religious duties was uniform, and spoke well for the principle upon which he acted. At length, Wiltshire, who had always a great fondness for outdoor pursuits, for poultry, gardening, &c., and who was getting old enough to long to be his own master, could not resist the pleasure of renting a small farm, and investing his little savings in stock. He was a single man, and, therefore, had everything to do himself; but he began by taking a housekeeper, until he found himself cheated and inconvenienced. Then he sent for a niece, with whom he went on for a long time, but she married and left him; and he then undertook to be all in all to himself, and being a very handy person in every way, he got on tolerably well.

For the first year or two, Wiltshire steadily kept up his Sunday duties, as far as could be seen. He always contrived to attend church at least once a day, and he was as regular in his appearance at the Lord's table. But by degrees his attendance slackened, his seat was frequently empty, his suit of black grew browner and browner, and the powder which he long retained in his hair gradually disappeared, so that a change was already apparent in his outward man. When his absence from church was remarked, he made the same excuses that people always make on such occasions—"the cows, and the pigs, and sum'mut" were always in the way. He could not contrive his worldly affairs so as to serve two masters; if he had, he would have done what never man could do; but the one he loved and chose to obey was mammon. The "piece of ground," the "five yoke of oxen," triumphed, and the service of God was given up.

From that time Wiltshire's glory departed. The calm, contented smile that used to be seen, was gone. He worked away, it is true, early and late, and ate "the bread of carefulness;" but he seemed not to enjoy the "sleep" that is given to those who love and serve God. There was care upon his brow, and peace of mind was gone. There is a steady, respectable walk in life which looks very well in the eyes of men, who cannot see below the surface; but it is not religious principle, or it would stand steadfast in the day of trial. "Slippery places" show which is gold and which is base metal; and men are brought into them as warnings to others, as well as to arouse their own souls.

Wiltshire very soon began to reap the fruit of his doings; everything seemed to go backwards instead of forwards with him; he became in arrears for rent, and although he met with patience and consideration, the debt gradually grew larger, and of course more difficult to pay. The slippery place tried his honesty, and proved it to be wanting. It had looked fair to the eye, but it bore no stamp, and could not, therefore, bear the heat of the furnace.

News was brought one morning that James Wiltshire had decamped in the night, with his waggon and horses, and bed and clock. It was too true; not a vestige of him or his stock was to be found. The house was deserted, the stable and cow-houses empty; a rick or two of damaged hay, and the crops in the ground, were all that remained to mark where his place had been. The removal of all his effects, such as they were, with the cows, pigs, &c., had been very quietly and carefully done; no one suspected him of such conduct, or thought of watching his proceedings, and he had, therefore, a full opportunity of getting away with them all. He did not leave the county; in fact he stationed himself in the next town, trusting that no steps would be taken against him, and attempted to set up a small farm in the neighbourhood. But this came to an untimely end also; and the last information that we received of his whereabouts, described him as the occupier of a small wooden house upon wheels, in the midst of a large, wild field, with pigs, and rabbits, and fowls, all penned safely around him. The house is said to have been built with his own hands; and in this dreary and desolate state, the respectable and well-conducted butler of former days, now lives almost an outcast.

This sketch may be useful to some who bear very fair characters in their neighbour's eyes. It may throw some light upon the real state of their hearts, and lead them to watch for symptoms which sometimes the sunshine of

prosperity hides from our eyes. There may be a very hollow and sapless trunk, while the boughs bear an apparently healthy foliage;—there may be rich and vigorous leaves, but no fruit beneath them. Let us look deeply and closely at the root and spring of all our actions, lest there be bitterness in that which seems fair and good. When we see our trees and plants beginning to wither, we know there is something wrong below the soil; and when our ways begin to grow crooked, we may be equally sure that our root is diseased, and unless we seek out the canker, the plant will wither and die. If godly sincerity be not the moving spring of every fair appearance, the day will come when our leaf will wither, and our fruit shall not be found.

NEGLECTED PLANTS SUITABLE FOR EARLY SUMMER DECORATION.

As the revival of annuals, for purposes of floral display, has latterly attracted much notice, allow me to call attention to a much-neglected, and, in my opinion, a much more useful class—I mean *Herbaceous plants*. They are more useful, because they are easier to manage, better able to resist the attacks of insects and other casualties, which so often gap and disfigure beds of annuals, and, what is equally important, are quite as beautiful. I am sorry and surprised that the easy culture, sturdy habit, and numberless variety of Herbaceous plants, have not again placed them on the same footing, as regards garden decoration, they held in the time of our grandfathers; but I hope to live to see them restored to the favour they deserve. However, my purpose was not to write a panegyric on their general utility, as a class, but to notice some few that I have found useful in ornamenting sets of flower-beds in the spring and early summer months; and in so doing, I will confine myself to such as I have proved to be suitable for that purpose.

First, then, on my list is the beautiful *Alyssum saxatile*, with its profusion of golden umbells of glittering flowers, blooming in early May, and so easily removed to make way for another crop. It is easily increased by cuttings, but more so by seeds, when it produces them, which it does more sparingly than most of the plants belonging to the same class. It stands the winter well; and hares and rabbits do not seem to relish it. This property, though of no consequence to the denizen of thickly populated districts, is of much importance to many gardeners where the grounds are surrounded by game preserves. I do not know of any plant (not even the gay *Calceolaria*) that affords a brighter yellow bed than does this very old plant, and in that colour it stands Lord of the Parterre with me for spring display. I have grown it for several years, always taking it up when other things were to be planted in its place, and planting it for the summer in a quiet place.

In the whites I have not been so successful for an early bloomer; but I grow a great quantity of the *Double White Rocket*, which, however, scarcely flowers before the end of May and early in June, and, consequently, I plant it in the autumn, and, at the proper time, plant the ordinary summer-flowering plants amongst them, and its magnificent spikes of white blossoms make it everybody's favourite. It increases freely from slips taken off when the plant has made a fresh growth; say in the middle or end of August, and the sturdy appearance of the plant makes it of no little service in furnishing the beds in winter; consequently, I plant it in autumn, when the summer crop has been removed, and the necessary enriching substance put in the bed for the next year, as we must bear in mind that *Tom Thumbs*, *Verbenas*, or whatever plant is intended to succeed it, must be planted some time before it be removed, and the soil of the bed cannot then be removed with any degree of use. There is likewise a *purple one* of the same habit; but I have not been able to increase it sufficiently to make it useful, otherwise it is equally available.

Another white flowering plant, and one which continues the whole summer, forming as good a white flowering bed as anything (*Verbenas* and *Petunias* excepted), is the *Double-flowering Feverfew* (*Pyrethrum parthenium*). This flowers from the middle of May to the end of the season. I let it stand (as it increases so freely by cuttings), and usually plant with it the *Scarlet Penstemon*, being something capable of competing with it for the food and space both

ought to share. They make a pretty and well matched bed, and, I thought, one of the best I had last summer. I have likewise planted it with a dwarf bedding out *Dahlia*, of a dark purple colour, which looked equally well. But I mean to say a little more on this *Dahlia*, which is not half so much grown as it ought to be. It seldom or never exceeds eighteen inches high, and the colour is striking.

For a more early white-flowering plant the *Arabis verna* is very useful and showy; but I have not used it much.

Coming now to scarlets, the best and most useful I have employed is the *Valerian*. Seed from the best coloured ones, sown about the middle of June, furnish plants quite large enough to plant in the beds in November. If sown sooner they flower the same season, and the compact habit of the plant is much impaired, which ought not to be overlooked, when for so many months nothing else but the foliage of the plant is seen. In this case, too, the succeeding crop must be planted amongst the *Valerians*, and if the beds have been enriched in autumn, the *Valerian* will be getting too luxuriant in May, as a check to which, chop round each plant with the spade, and likewise force the spade underneath to cut the tap-roots, as it roots very deep. It flowers abundantly, looks well, and requires very little attention.

Wallflowers are also well adapted for furnishing a bed in winter and flowering in May. They only require to be sown and kept rather thin during the summer, and removed in November, the same as the *Valerian*. *Stocks* I have tried the same way, but being annoyed with hares and rabbits, I never could save them; but I should think, where such evils do not exist, they will be very serviceable. One thing against them is, that they will not endure a hard winter so well, and a broken summer bed looks unsightly; but there are a host of other things, which, taking habit of plant, hardiness, and the property of looking well, either at a distance, or on close inspection (which annuals seldom do), makes them, in many respects, more desirable. Those I have now given are only a small part of what may be made available; and on another occasion I shall notice the others that I have adopted with advantage; and shall be glad, in the meantime, to hear from others who may have been pursuing the same object.

(To be continued.)

S. N. V.

GENERAL LIST OF VERBENAS.

Which may be cultivated either in pots, or in mixed beds, or in patches of the borders. Most of the bedding kinds may be cultivated in the same way also.

NEW VARIETIES, from 3s. 6d. to 5s. each.

Augusta; white and purple.

Bijou des Amateurs; pink and carmine eye.

Conspicua; vermilion, with white centre.

Elisa; white and violet centre.

Eliza; blush, with rosy purple centre.

Gaiety; rosy pink; very large.

Lady of the Lake; rose centre, yellow eye.

Madame Sontag; rose, mottled with peach.

Monsieur Pasquin; violet blue, with a white centre.

Princess; rosy purple; a good trusser.

Voltigeur; rose, with a very large white eye.

Wonder; lilac, with a rosy purple centre.

OLDER VARIETIES, 1s. to 2s. each.

Adela; rose-lilac, purple centre.

Ariadne; creamy buff, or apricot; curious and pretty.

Beranger; carmine; good.

Bicolor grandiflora; scarlet, with dark eye.

Clotilde; rose, distinctly margined with carmine.

Duchess of Northumberland; peach, with rosy pink centre, primrose eye.

Enfant de Versailles; large; peach colour, with rose eye.

Favourite; bluish purple, white centre.

La Seduisante; rose, mottled with purple.

Madame Bæuzod; white, with purple centre.

Magnificent; large; rose centre.

Princess Alice; blush rose centre; fine.

Picciola; rich dark shaded.

Satyr; fine rosy carmine edged with blue.

Souvenir de Marie; white, mottled and striped with blue.

Tandleyana; bright scarlet.

Venus de Canova; lovely peach, with a rich rose centre.

Vulcan; superb rich crimson, with a dark centre.

T. APPLEBY.

QUICKSET HEDGES.

I disapprove of cutting down quicks close to the ground, when first planted out. The stump leaves nothing to draw up the sap, or to encourage growth; in fact, by cutting the head off, and by trimming and damaging the roots, you *bother* nature, and she takes time to see what you have been about, before she can make a start. I have seen the results of an experiment upon two quick hedges, by not cutting down at all, and by cutting down close. The hedge which was planted with long quick, just out of the nursery, and which was cut down at the end of the first year after planting out, and then only to just a foot from the ground, is far in advance of the close cut quick, both in growth and quality of hedge. The year before last I cut some quick, when first planted out, ten inches from the ground, and its lateral shoots are surprising; whereas, if I had cut it close, its shoots would have ascended, not laterally, but perpendicularly in a mass, from the small surface of the stumps.

I strongly recommend your readers to plant out their quick *long*, without cutting it at all, and to let nature have her way one year at least, and she will repay you. You may then cut close, or not, as your fancy dictates, without making the great mistake of putting nature out of her course more than necessary. Gardening is like surgery; you must follow nature, and by no means venture to oppose, or to dare her.

A WORCESTERSHIRE MAN.

RUSTIC WORK.

SOME of your readers are doubtless within reach of an iron foundry, and could obtain the damaged, or cast-off, moulds, used in casting the metal, for a very trifling cost. The effect of some I once saw used as a casing to the sides of a bank of earth, through and up which a flight of rough steps was cut, was admirable to a cursory observer; the effect was that of very pleasing rustic work, and a close inspection would hardly undeceive, certainly puzzle, any one not familiar with the article.

I should think them admirably fitted for forming cases to hold pots or boxes of plants, as described by Mr. Beaton (*COTTAGE GARDENER*, vol. iv., p. 94), at least in appearance. The material I cannot speak to, but to the best of my recollection was told they were of wood, studded so closely with pegs or nails, that the liquid metal would not flow down between them. The rough rustic looking surface being, owing to the varied degree of projection of the pegs which forms the high and low relief in the different parts of the pattern to be cast from them. They were of a very dark colour, owing probably to the effect of the hot metal on the pegs, if they were of wood.

TO CORRESPONDENTS.

*** We request that no one will write to the departmental writers of *THE COTTAGE GARDENER*. It gives them unjustifiable trouble and expense. All communications should be addressed "To the Editor of *The Cottage Gardener*, 2, Amen Corner, Paternoster Row, London."

TO MAKE A WESTPHALIA HAM.—Rub your ham well with 4 ozs. of saltpetre, and let it lie; boil one quart of the strongest stale beer, with bay salt, common salt, and brown sugar, of each half a pound; pour it whilst hot on the ham, rubbing it all over thoroughly, rubbing it in the same manner twice every day for a fortnight, and turning it once a day. At the end of that time, take out your ham and hang it pretty high in the chimney, with a fire made of saw-dust and horse litter, fresh every day, for three days and three nights; after which, hang it over a baker's oven, or in any other dry place, where there is the smoke from a wood fire; be sure to fill the hock-bone with salt.—SARAH.

AGED PILGRIM'S SOCIETY.—With great pleasure we insert the following letter from Mr. Box, the Honorary Secretary of this Society, dated from Northampton Square, London:—"Will you do me the favour to make my acknowledgment to the subscribers to *THE COTTAGE GARDENER*, of the receipt of 10s. on behalf of the 'Aged Pilgrim's Friend Society,' from Mr. E. Stevens, of Bristol, being the amount forwarded to him in postage stamps, for 'Himalayah Pumpkin seed,' in accordance with your directions to applicants. Two shillings of the amount being from a gentleman in Dublin, whose kindness in the gift, as well as the letter that accompanied it, Mr. Stevens desires particularly to acknowledge."

MAGAZINES (*G. M.*).—The *Midland Florist* is a three-penny monthly, cheap, useful, and chiefly relating to flowers. *Maund's Botanic Garden* is a shilling monthly, giving four excellent coloured portraits of hardy flowers, with other useful gardening and botanical information. *Paxton's Flower Garden* is a half-crown monthly, giving three beautifully coloured portraits of flowers, with woodcuts of others. *The Gardeners' Magazine*

of *Botany* is also a half-crown monthly, gives five beautifully coloured portraits of fruits and flowers, besides woodcuts of others, and of all subjects connected with gardening, besides essays on gardening subjects. The *shilling covers* of *THE COTTAGE GARDENER*, are handsome, and will not disgrace your bookshelf.

CRYSTALS ON LEAVES OF ICE PLANT (*Publicus*).—It is quite unexplained why the secretion on the leaves of this plant (*Mesembryanthemum crystallinum*) retain a solid form, for it is chiefly water, containing, according to the analysis of Dr. Voleker, albumen, oxalic acid, chloride of sodium (common salt), potash, magnesia, and sulphuric acid.

WASPS (*M. O.*).—There is no doubt that destroying wasps during April and May prevents the formation of so many nests. The Earl of Trequair offers a reward annually for all wasps brought in previously to the 1st of June. In 1844, were destroyed, 224 dozen; in 1845, 1573 dozen; in 1846, not a wasp found; in 1847, 4 dozen; in 1848, 1273½ dozen; in 1849, 856½ dozen; and in 1850, 528½ dozen. (*Timb's Year Book of Facts*.)

SCARLET GERANIUMS (*Georgiana*).—Your scarlet geranium is one of those fortunate plants of which the name is forgotten, or lost, to this cutting-making world, and is therefore permitted to live quietly in its native province, while others of its family, perhaps less worthy of public patronage, can neither rest or slumber, here, or there, or anywhere else. We are delighted to hear that your husband "marvels" at your success, through the instrumentality of our pages. Greater things, however, in the same line are in store. May they prove equally available to you.

INDIAN SEEDS (*J. S. S.*).—Mr. Beaton has long since anticipated your questions. There is no difficulty in getting them home by the overland route, if they are well dried, and put up in coarse brown paper packets, then in a rough box, or among passengers luggage, without being hermetically sealed; the more loose they are the better. Powdered camphor is the best thing to keep away insects from them. May we beg of you, and, indeed, any of our readers, who may detect grubs or insects among foreign seeds, to pack them in the barrel of a quill, and send them to *J. O. Westwood, Esq., Brunswick Cottages, Hammersmith*. They may be more valuable than seeds.

BRUGMANSIA-BED (*S. J. F.*).—A southern aspect is best for it, a west aspect next best, and a sheltered situation is also desirable, that is, sheltered from high winds, and from cold north and east winds. Three plants will be enough, they will fill the increased space by the time they are well established. The grand secret is to keep them perfectly dry in winter.

LILY (*Eliza L.*).—Some one has very likely made a mistake in the name. There is no such name in use as *trumpet lily*, as far as we know, and we suspect Turncap or Tiger lily is the name intended. If so, you will see it treated of by Mr. Appleby among other lilies, at page 309 of our second volume.

PEACH-TREES FAILING (*G. G.*).—You must look deeper into the subject of peach culture for a radical cure, than the wire worm. Strange, so explicit as we have been about the peach, that there should still be misapprehension. We have wire worms too, but we pay no heed to them (although great rogues), and at this moment our peaches are a model. But we do not tolerate the *aphides* for a day, neither the *red spider*. We have no doubt that with a perfect immunity from these two pests at all times, that the peach will succeed in almost any ordinary loam, heath, or sandy soils, the two latter requiring good mulching after a May rain. We do not like much engine work out doors; certainly not in the north. Pray study our back papers on the peach. Follow them to the very making of the platforms, and we will guarantee you success to your heart's content.

WHITE FLOWERS (*Litherland*).—The *Sweet Alyssum* will spread eighteen inches or two feet, and rise hardly a foot, and bloom till the frost stops it; the *white Clarkia* grows upright, and flowers for six weeks; and the *white Malope* grows upright, from two to four feet, according to the soil. *White Verbenas*, and *white Petunias* are abundant, and bloom to the end of the season. *White Candytuft*, *Navelwort*, and *Calendula hybrida*, are not quite so high as *Clarkia*, but they bloom as long, and may be sown to the end of May. There is an old white-leaved plant called *Sea Rugwort*, quite hardy, that would suit your purpose as well as white flowers. Yellow flowers are abundant.

CAMELLIAS SCORCHED (*Flora*).—The leaves are sun-burnt, and no art will ever restore the brown parts to a healthy green. Your geranium leaves may be discoloured from old age, but if not, the roots are in a bad state indeed, but we pick off such leaves every week in the year, from plants that are quite healthy. The *Catalonian Jasmine* never opens all its flower-buds with us, unless on grafted plants confined at the roots. The plants flower all the better if the shoots are stopped at every second joint all the time they are growing. When they are allowed to grow in their own way all the summer, they seldom open their flower-buds without a little forcing.

CAMELLIA LEAVES, &c. (*G. B.*).—We cannot say what has caused the specks on the young leaves of your Camellias without seeing one of them. The other leaves you inclosed are totally destroyed by the thrips, by far the most dangerous of all the insects which infect house plants, and more difficult to get rid of than either green fly or red spider. If you turn to our indexes you will see how to deal with the thrips.

LIQUID MANURE (*Ibid*).—A vessel capable of holding 100 gallons is filled up one-third with horse and cow-dung, "with a small quantity of guano," then filled up with soft water, and a pound of sulphuric acid—is enough to kill all the greenhouse plants in Liverpool, if the materials in the hash were of the usual strength. It is an excellent compound, nevertheless, but for greenhouse plants, use two gallons of soft water to every gallon of the prepared liquid, and apply it at every second watering for the greenhouse plants; little and often is better than strong doses at long intervals.

CAMELLIAS DROOPING (*S. W.*).—If your Camellias are well rooted you need have no fear about the young wood drooping under a bright sun, after so much dull weather, even at the day temperature of 90°. You have no doubt observed cabbages, and other coarse plants, in the open ground, drooping under similar circumstances. The principle on

which such severity hinges, has been ably explained by Mr. Fish, in the number for the first of this month. We would still try them in the stove with a slight shading; but the *Azaleas* had better not be tried in the stove, as their roots are certainly at fault, else the leaves would not turn yellow at this season.

DOUBLE DARK PRIMROSES.—*F. S. H.* wishes to know where some of these can be procured.

ROUGH PLATE GLASS.—We are informed that although the importation of glass into France is at present prohibited, special permission has, however, been granted by the French government for the introduction of a quantity of Hartley's Patent Rough Plate (supplied by Messrs. James Phillips and Co., of 116, Bishopsgate-street Without), for experimental purposes, on the application of some influential horticulturists, who have witnessed the results attained by the use of that article in this country.

VINEGAR PLANT (*W. K. M. S.*).—We have seen the statement that a lady had a large fungus in her stomach, owing to her having indulged in vinegar made by this plant, and we believe it to be a tissue of falsehoods.

CLAYEY SOIL (*J. Newland*).—Road drift will improve the staple of your soil; so will coal-ashes; so will tanner's bark; but we cannot tell how much of such applications will be necessary to apply before you render your soil friable. Get a barrow load of a compost of all the additions we have named, and a barrow load of your soil, and mix them thoroughly; this will be your best guide. Thanks for your invitation, but we cannot promise. We coincide with your feelings, but can have nothing to do with testimonials.

WIRE WORMS (*A. B.*, *East Lothian*).—We wish we could tell you how to preserve your carrots effectually from the wire worm. Frequently forking over the soil and picking them out; and persevering in hoeing, are now your only resource; and, it is said, sowing white mustard among the crop will get rid of them. Try the latter, you can remove the mustard before it injures your crop.

MISS MARTINEAU'S COW-KEEPER.—A correspondent (*M. M. B.*) wishes to know "in which union in Norfolk labourers are instructed, and from whence Miss Martineau obtained her servant?"

WORK ON BEES (*J. W. K.*).—The name of that by *A Country Curate*, is *The English Bee-keeper*. It is an excellent little work, and we regret that want of leisure alone has prevented us hitherto noticing it more fully, as we intend.

ROSE CUTTINGS (*W. L.*).—Thanks for those of the Blair rose.

CHEAP LABELS.—We are informed that those inquired for by *R. W. M.*, are to be obtained from Messrs. Deane, King William-street, London Bridge.

WEEVIL (*E. P.*).—Unless we saw the specimen, it is quite out of our power to tell its name. There are hundreds of species of *Curculio*.

ASPHALTE FOR FLOORING (*S. N. T.*).—The best composition with which to form this, is perfectly dry lime rubbish, sifted very fine, made into a stiff mortar with boiling gas tar. It may be put on about two inches thick, smoothened with a plasterer's trowel, sprinkled over with a little of the sifted lime, and when sufficiently cold and hard, beaten gently quite smooth. In a day or two it will be as hard as asphalt.

BEEF AND MUTTON CHEMICALLY PREPARED.—A correspondent (*L.*) wishes to know the process for thus preparing "the mess beef and mutton at Morlaix," mentioned in *Rambles through France*, by the *Times Commissioner* in 1840, page 48.

INDEX (*T. Simpson*).—If we could get enough subscribers to cover the expense we would publish a general index at the end of our sixth volume.

RUSTIC DOVE-HOUSE (*B. C.*).—We cannot undertake to furnish such plans.

NAMES OF PLANTS (*R. L. B.*).—*Abutilon striatum*. (*E. B.*).—1. *Lonicera xylosteum* (Fly Honeysuckle). 2. *Lonicera alpigena* (Alpine Honeysuckle).

BELLOWS FOR FUMIGATING BEES, &c.—In answer to a correspondent, *B. B.* writes thus:—"The lamp I use is a cylinder, three inches and a half long, and two inches and a half wide, with a small tube at each end, one to fit the bellows, the other flattened to enter the hive; within the cylinder, at each end, is a perforated plate. The cylinder consists of two parts; the part nearest the bellows should lap over the other, as then I find the smoke does not so easily escape. Mine is made of copper, and brased; it cost 3s. 6d. Of tin, *rivetted*, it may be made for 1s. 6d. I generally commence operation as soon as it is dusk, and the bees all in. The lamp, containing one packet of Neighbour's prepared fungus, (puff-ball, well dried, will do as well) amply suffices for two hives. Six hives, to which I added bees in the autumn, although left rather short at the beginning of winter, are now doing well, and working vigorously. A hive to which no bees were added, weighing (1st of April) 20½ lbs., is doing little or no work. I have, since the 15th of February, been giving the six hives 3 oz. of Mr. Golding's syrup every other day; this I have now (26th April) discontinued. I strongly advise 'A Recent Subscriber' to adopt the plan of uniting. He may do it without risk of injury or fear of success by attention to the directions. In the account of the burial of bees, page 12, I ought to have added, that the combs and hive were perfectly free from mildew, and as dry as when put in the ground. I was convinced, as was an old bee master averse to burying, that the bees, in this instance, died of starvation. The consumption was such as will not induce me to repeat the experiment. Where may prepared barley sugar be obtained, and at what price? I prefer it for feeding. The objection is, the difficulty of preparing is greater than that of syrup, and the cost here to buy, what the bees do not all consume, is 10d. per lb. How do you account for Tulips throwing up three or four flowers from one stalk? I have had this for three years."—[We should like to have an off-set of this Tulip].

THE COTTAGE GARDENER—ADVERTISEMENTS.

NUTT'S CHAMPION CELERY.

Plants of this will be ready to be sent out on and after the 24th of May. Best Plants, 1s 8d per score. Inferior Plants, 6d per score. A Hamper, holding from three to ten score, is charged 6d. Apply to Mr. JOHN NUTT, near St. John's Church, Park, Sheffield.

N.B.—A remittance expected from unknown correspondents.

Mr. Marsden, of the British Lion, Thomas Street, Sheffield, grew, last year, ten plants of NUTT'S CHAMPION CELERY, averaging in weight six pounds and a half.

THE MOST SUPERB BED OF

TULIPS in EUROPE.—Mr. R. LAWRENCE, of Hampton, will sell his unrivalled bed of TULIPS, of the splendour of which some idea may be formed by the number of fine varieties: viz., 30 Louis XVI., 16 Musidora, 12 Pompe Funebre, 12 Fabius, from 4 to 10 each of Bysantium, Pandora, Parmigiano, Brown's Polyphemus, ditto Ulysses, Dicken's Duke of Devonshire, Marcellus, Rose Arlette, Lyde's Queen of Hearts, Brown's Magnificent, Strong's King, Nora Crena, Thalia, Vivid. Besides several each of Lac, Coronation, Iago, Apelles, Salvator Rosa, Lord Collingwood, Marshal Soult, Selim, Groom's Queen Adelaide, Lady Exeter, Laura Lawrence, Hepworth's Queen of the North, Dutch Ponceau, Goldham's Maria, Brown's Sylvia, Jeffrey's Elizabeth, La Belle, Nanette, Lawrence's Lady Sale, and nearly every flower that has been raised worth cultivation by Lawrence, Clarke, Lyde, Dixon, Strong, Walker, Glenny, Goldham, Brown, Groom, &c. Persons desirous of receiving catalogues may send their addresses to Mr. R. LAWRENCE, Red Lion, Hampton (where the bed may be seen from the 1st of May to the day of sale); Mr. LOCKHART, 84, Fleet-street; and Mr. GLENNY, Strand. Catalogues will also be forwarded to the principal Seed-shops.

NEW DAHLIA.—YELLOW

GEM. The most useful (in the present dearth of good yellows) that has been shown, having received a certificate at the great trial show of the Metropolitan Dahlia Society, and also at the Stoke Newington Exhibition, will be sent out in May, at 10s 6d per plant. Usual allowance to the trade. W. GURNEY, 36, Wilmot Street, Bethnal Green.

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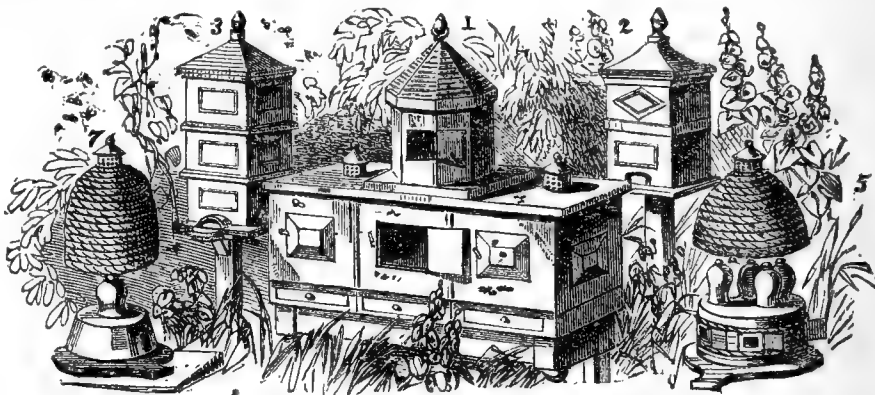
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WEEKLY CALENDAR.

M	D	W	D	MAY 22—28, 1851.	WEATHER NEAR LONDON IN 1850.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bef. Sun.	Day of Year
					Barometer.	Thermo.	Wind.	Rain in In.						
22	Th			Lily of Valley flowers.	29.866—29.743	66—45	S.W.	0.20	1 a. 4	52 a. 7	1 6	21	3 40	142
23	F			Mountain Ash flowers.	30.205—29.977	69—39	W.	—	iv	53	1 31	22	3 36	143
24	S			QUEEN VICTORIA BORN 1819.	30.202—30.036	76—50	S.	—	59 a. 3	54	1 53	23	3 31	144
25	Sun			ROG. SUN. PRINCESS HELENA B. 1846.	29.971—29.945	72—50	N.W.	—	58	56	2 15	24	3 25	145
26	M			B. Argus Butterfly seen.	30.013—30.003	73—48	S.W.	—	56	57	2 33	25	3 20	146
27	Tu			Ven. Bede. Mulberry Tree leaves.	30.186—29.910	77—50	S.W.	0.04	55	58	2 52	26	3 13	147
28	W			Avens flowers.	30.173—30.161	58—50	N.E.	0.97	54	59	3 13	27	3 6	148

IN our last number we observed that Stephen Switzer, at the very commencement of the 18th century, was the first writer on gardening who published his own good practical knowledge for the benefit of the community, and we contrasted his sound knowledge with the absurdities to be found in the writings of the 16th; but we need not have passed back to such a distance from his own era, for such a contrast. As an instance, we have just taken from our book-shelf a little duodecimo volume dated 1693, being the second edition, and bearing this prolix title "*The Florists' Vade-mecum*." Being a choice compendium of whatever worthy notice hath been extant for the propagating, raising, planting, encreasing, and preserving the rarest flowers and plants that our climate and skill (in raising, making, and meliorating apted soils to each species,) will persuade to live with us. With several new experiments for raising new varieties, for their most advantageous management. In a more particular method than ever yet published. Together with directions what to do each month throughout the year, in both Orchard and Flower-garden. By SAMUEL GILBERT, *Phileremus*." Now, *Phileremus* means a lover of solitude, but, like another poet, for he worshiped the Muses as well as Flora, we have a shrewd suspicion that

He loved to have a friend in his retreat,
To whom he might whisper—solitude is sweet.

And we are not quite certain that he was not one

Who likes the country, but in truth must own,
Most likes it, when he studies it in town.

Be this as it may, he was no hermit, for he had a wife, and rejoiced in writing verses to the titled ladies among his friends.

Now this *Florists' Vade-mecum* exhibits much of the good practical knowledge of Switzer, but there is about it much of the superstitious ignorance of Heresbach. It marks the transition period in the history of gardening—it savours both of the good time advancing, and of the dark time passing away. His chapter on *Auriculas* may be taken as an example of the good knowledge then diffusing, and the directions for their culture, and for raising seedlings, might be now followed without injury to the grower's reputation. *Auriculas* were then in high esteem, and he enumerates some of the choicest varieties, such as "*The Fair Downam*," raised by a divine of that name." *The Black Imperial*, *Blazing Star*, and "to close with the best last, there are two rare striped *Auriculas*, their price bespeaks them, the one at four, the other nearer five pounds, and have been sold for twenty pounds, as I have been informed. They may be now cheaper, and are in the hands of my truly worthy friend, Peter Egerton, of Boughton, near Chester, Esq." Friend Gilbert, was a great courtier, he continually eulogises this worthy friend, and his love of solitude had not won him from devotion to the ladies, for in some highly eulogistic verses to "Mary Egerton, worthy consort to (the above said) truly honoured Peter Egerton," he says:—

My heart, as flowers, their topsails lower to you,
Commandress over both; I therefore sue,
Before I close to fix your name, of power
To raise the heads and beauty of each flower.

We would next give some examples of his absurdities, but they may be reserved for extraction when noticing another of his gardening publications,—the first English Gardener's Almanack which issued from the press. This he published in 1683, being then resident at Kinlet, near Bewdley, in Worcestershire. It is appended to the second edition of his "*Florist's Vade Mecum*," and its contents are thus enumerated in the title page:—"The Gardener's Almanack for five years, 1683-1687. Showing the day of the month and week; the sun and moon's place each day in the signe; break of day; sun-rise and set; length of day and night; eclipses of the luminaries every year; the moon's quarters, her change and full; with monthly directions what ought to be done in either kitchen or flower-garden for ever; &c. By Samuel Gilbert, *Phileremus*, 1682."

The monthly directions are correct for the most part, but that the author did not rise superior to the astrological prejudices of his time, may be believed after reading the following extract:—"1. If you prune your vines, the moon in full and posited in Taurus, Leo, Scorpio, or

Sagittary, neither worms nor birds will infest your grapes. 2. Trees are not to be grafted, the moon waning, or not to be seen. 3. Cut trees you would have quickly grow again, when the moon is above the earth in the first quarter, and if it may be, joined to Jupiter or Venus. 4. Sow or plant when the moon is in Taurus, Virgo, or Scorpio, and in good aspect of Saturn. 5. Set or sow all kind of pulse, the moon in Cancer. 6. Dress your gardens and trim your shrubs when the moon is in Libra or Capricorn. 7. Set or cut any shrub or tree you would retard in the decrease of the moon in Cancer. 8. Set or cut, or sow what you would have speedily shoot or grow, in the increase of the moon. 9. For double flowers, sow and transplant in the full of the moon. 10. Neither graft, set, sow, nor plant during an eclipse, or when the moon is afflicted by Saturn or Mars. 11. Gather fruit, the moon decreasing (October)."

Lastly comes the question—Who was the author of these duodecimos? and we wish that we could give more information than is comprised in the scraps gathered from his dedications, and other portions of his works. From these we learn that he was the *Rev. Samuel Gilbert*, at one time rector of Quatt-Malvern, and chaplain to Lady Jane, widow of Charles Gerard, Baron Bromley, during which time he published, in 1676, a little volume, entitled *Fons Sanitatis*, being in praise of a mineral spring at Willowbridge, in Staffordshire. The time of Mr. Gilbert's death is unknown to us, and we only know further respecting him, that he married a daughter of another delighter in gardening, John Rea, also a protégé of the Gerarde family. Mr. Rea also resided at Kinlet, and was author of a floricultural folio, published in 1665, entitled "*Flora, Ceres, and Pomona*."

Mr. Gilbert, with as much truth as prejudice, says:—"The skill and collection of Mr. John Rea, my father-in-law, were alike famous." That collection was especially rich in Tulips. "He had," says Mr. Gilbert, "the largest collection of any man in England, some of which I lost by being beyond sea at his death." As we shall not have occasion to mention Mr. Rea again, we will conclude with an extract from his work, especially as it will offer a suggestion to a correspondent (*Fanny F.*), who, in common with all rose-fanciers, finds it "difficult to obtain perfect blooms" from her *double yellow rose*. Mr. Rea says:—"This is the most unapt of all others to bear kindly and fair flowers, unless it be ordered and looked unto in an especial manner. It is best inoculated upon another stock; others thrive and bear best in the sun, this in the shade; therefore, the best way that I know to cause this *rose* to bring forth fair and kindly flowers, is performed after this manner: First, in the stock of a *Franckfort rose*, near the ground, put in a bud of the *single yellow rose*, which will quickly shoot to a good length, then half a yard higher than the place where the same was budded, put into it a bud of the *double yellow rose*, which growing, the suckers must be kept from the root, and all the buds rubbed off except those of the kind desired, which being grown big enough to bear (which will be in two years), it must in winter be pruned very near, cutting off all the small shoots, and only leaving the biggest, cutting off the tops of them also as far as they are small; then in the spring, when the buds for leaves come forth, rub off the smallest of them, leaving only some few of the biggest, which, by reason of the strength of the stock affording more nourishment than any other, and the agreeable nature of the *single yellow rose* from whence it is immediately nourished, the shoots will be strong and able to bear out the flowers, if they be not too many, which may be prevented by nipping off the smallest buds for flowers, leaving only such a number of the fairest as the tree may be able to bring to perfection, which tree would stand something shadowed, and not too much in the heat of the sun, and in a standard by itself rather than under a wall. These rules being observed, we may expect to enjoy the full delight of these beautiful *roses*, as I myself have often done by my own practice in divers trees so handled, which have yearly born store of fair flowers, when those that were natural, notwithstanding all the helps I could use, have not brought forth one that was kindly, but all of them either broken, or, as it were, blasted."

METEOROLOGY OF THE WEEK.—At Chiswick from observations during the last twenty-four years, the average highest and lowest temperature of these days are 67.4°, and 44.6°, respectively. The greatest heat, 91°, occurred on the 28th, in 1847, and the lowest cold, 29°, on the 25th, in 1839. During the time 105 days were fine, and on 63 rain fell.

THERE are now several Societies established for the purpose of deciding upon the merits of new Florists' Flowers, and we believe that all those Societies are actuated by an honourable and praiseworthy desire to encourage floriculture, and to point out, by their judgments and prizes, which are the flowers most deserving of public patronage. To a certain extent they effect their purpose—and the public may feel assured, that a flower rewarded by any one of those Societies has some

prominent merits. But this is not all that the public requires, nor is it all the public is entitled to have from those who profess, and, we believe, intend to watch over its interests. A flower to be entitled to receive the highest reward any one of those Societies can bestow, should be pre-eminent in *all* good characteristics; and the Societies in giving their award should minutely particularize the merits. Now, they do not do so; nor are they, in general, sufficiently stringent in withholding re-

wards. We say this advisedly—speaking of what we know, and of what we have seen; and, lastly, these Societies do not agree in their decisions upon the same flowers. This arises from there being many judges, all more or less differing in taste,—all subject to various prejudices, and none bound down by any admitted laws of floral beauty.

This is a great evil, and we have resolved to do our best to correct it; for we feel, that having the largest circulation of any gardening paper, and being totally unconnected with any Society or dealer in flowers, we have the power to provide a remedy.

We have resolved to have every award of the Floricultural Societies supervised and criticised by the best living authority on such matters—Mr. Glenny, and his criticisms shall be published, week by week, in our pages. Mr. Glenny has published a code of floral laws in his *Properties of Flowers*. All florists, therefore, know the statutes which he admits, and, if he decided contrary to them, he would be convicted by his own pre-published authority.

To carry out our intention of being more useful to the cultivators of FLORISTS' FLOWERS, we mean to enlarge this department, not only with relation to judgments upon such flowers, but also as to their culture. Any person desiring to obtain Mr. Glenny's opinion upon a flower, must send it directed to him at our Office, 2, *Amen-corner, Paternoster-row*, and the opinion will be published in our columns under the head of FLORISTS' FLOWERS. Let us warn all parties wishing for such opinions that it is useless to send them, except in a box so strong, and packed in damp moss, as neither to suffer from the Post-office punches nor from dryness

THE Royal Botanic Society's Show in the Regent's Park, on the 14th instant, was the most beautiful floral exhibition we ever witnessed. Never, under one tent, were there ever arranged together such splendid and admirably grown hosts of Orchids and Indian Azaleas. The Pelargoniums were magnificent specimens; but the backwardness of the season forbade them being in full flower, and they will be still more striking a week hence. We shall give more details in a future number.

On the following day we were favoured with a private view of what we believe to be the finest bed of Tulips in Europe. It is at Mr. Groom's, florist, Clapham, and is now in perfection, and open to the public. No one delighting in flowers, being now in London, will have an excuse for returning home without seeing it, since he can be put down at the garden gates by an omnibus for fourpence at any quarter of an hour he pleases. Mr. Groom's Tulip bed is one hundred and fifty feet long, and is enclosed by what may be best described as a house with walls of canvass. The Tulips are in seven rows, and in number above two thousand. When the house is entered, the eye will be somewhat disappointed by the absence of dark colours to relieve the preponderance of white and yellow grounds, which prevail alike in the Bizard, Byblomen, and Rose classes; but this dis-

appointment, if it deserves so strong a term, passes away when each flower is examined in detail, the form and the feathering of some not being surpassable. We have not space to enumerate many, but we will particularize a few of the best, with their prices, to show that there are some for all purchasers; indeed, the prices vary from eighteen-pence to ten guineas. One, *Dr. Horner*, is nominally priced at one hundred guineas; but this is only to show the high qualities it possesses; and when it has been propagated more largely it will be purchasable at an average price. Among the *Rose class* of Tulips we would direct attention to *Catalani*, 7s. 6d.; *Countess of Wilton*, £2 2s.; and *Duchess of Sutherland*, 15s. Among the *Byblomen class* we would especially point out *Imperatrice florum*, 10s. 6d.; *Louis XVI.*, from 30s. to £5 5s.; *Michael Angelo*, 10s. 6d.; and *Victoria regina*, £3 3s., which Mr. Groom considers the best Tulip which he ever raised. Among the *Bizard class*, *Duke of Cambridge*, £10 10s.; *Duke of Devonshire*, £4 4s.; *Duke of Sutherland*, £3 3s.; *Everard*, £10 10s.; *Marshal Soult*, 15s.; *Nourri Effendi*, £3 3s.; and *Prince of Wales*, £5 5s., are especially excellent. The flower last-named has a peculiar orange-coloured ground.

GARDENING GOSSIP.

FLORICULTURE has suffered much from the practice of sending out *worthless novelties at a high price*, and we are glad to see the gentlemen who have been most guilty quarrelling with each other. One dealer has ventured to publish in his catalogue this pointed rebuke of his brother dealers: "*The following varieties of 1850 can always be had, but are not recommended as show flowers, from their inconstancy, similarity, or other defects.*" Then follows the condemned list which implicates all the principal dealers. Whether they will retort or not is doubtful; but it is the common conversation of the floral circles, who point to the writer's own list of unfortunates and ask, why he did not insert them also? The rebuke has no effect on the present year's novelties, for these are more numerous than ever, and the majority worse than ever.

If we were asked to point out the best *Dahlia* of each florist's batch, we should say Turner's best is *Barnmaid*; Bragg's best, *Admiral*; Barnes's, *George Glenny*; Mitchel's, *Queen of Beauties*; Sealey's, *Queen of the West*; Keynes's, *Baltic*; Hales's, *Sir Charles Napier*; Hansard's, *Mrs. Hansard*; Gunning's, *Yellow Gem*; and Morgan's, *King of Dahlias*. We do not say they are all good, but they are the best sent out by the respective growers.

The *National Florists' Society* met on the 8th, but there were very few novelties deserving a notice. An *Azalea* grafted on one of scarlet kind mixed its white and purple flowers with those of the stock, and may be considered an acquisition to that interesting family, because it was really new, and, though rather a flimsy petal, it was pretty. A tall *Amaryllis*, dark red, with a black shade in it, was only remarkable for being worse than some we possess already; the petals were very narrow and pointed.

How people can be so much behind hand in taste as to send some of the miserable things there were there we can-

not guess, seeing that "the properties of flowers," as now recognised, would at once show them that their productions were worthless. Thus were many old flowers shown, but nothing remarkable. We saw the error into which these present inexperienced censors fell at starting. They awarded certificates to flowers only partially developed—Geraniums with a pip open instead of a truss; so that they have to learn yet that many a plant will show a good pip, and be good for nothing notwithstanding. Men, to be judges, should know something beyond the growing of a plant.

Everybody who has the convenience ought to raise seedlings; for a good new variety of anything that can only be produced by this means, affords much gratification, if not profit, to the raiser, whether it be Geraniums, Polyanthus, Carnations and Picotees, Pinks, Dahlias, or any other subjects. None but those persons who raise seedlings can imagine the excitement that the opening flowers produce.

We only recommend what we do ourselves; and although we have been disappointed when we expected much, we have gone at it again with as much zeal as ever. Last year we procured six of the best Cinerarias we could find, and saved just enough seed to produce forty-eight plants, which are now in various states of forwardness; some showing their bloom-heads, though small, others not so forward; but as we had not another Cineraria in the garden, we shall be sadly disappointed if we do not get some trifling advance upon old sorts. But if we fail, we shall repeat our experiment.

There is nothing so mischievous as *bad watering*. If we water seldom, let it be thoroughly done when it is done. More plants are ruined by watering little and often than any unthinking person would imagine; the soil gets wetted an inch down, and the bottom is always dry.

In a paper on the cultivation of Heaths, mention was made of a fine collection nearly destroyed by an amateur paying attention to a newspaper, in which it was recommended to "give a little water," and in another place to "water sparingly." The mischief was explained to the amateur by turning out one of the pots an hour after it was watered, and showing him the soil wetted only two inches down, and the lower portion as dry as snuff. There is nothing leads to this so much as the pots being too full of soil, because the water which the pot will hold above the soil ought to be sufficient to go through it.

We have paid a visit to *Mr. Groom's Nursery*, but as he was absent we had not the advantage of his attention, which we have often experienced. This nursery is a creation of a very short period, and from an uncultivated swamp it has become a florists' garden in the highest order. One of the great features is his enormous *Tulip bed*, which promises to be a great treat to the lovers of that unique flower. Mr. Groom's bed is the largest, perhaps, in the country, and is covered in well; so that in all weathers the flowers may be seen in perfection, and these comprise every variety worth cultivation.

Another great feature is Mr. Groom's very extensive collection of *Lilacs*, not only all the species worthy of notice, but hybrids also, crossed in every conceivable way. The houses were full of flowers, especially of *Bulbs*, which, however, were more plentiful a month ago. There is an excellent collection of general nursery plants, and many promising novelties, which we shall visit when in flower. *Ranunculuses* greatly abound, and *Auriculas*, in collection, form a pretty feature.

The *Dahlia trade*, hitherto confined to a few, has this year been greatly extended, and the prizes considerably

lowered. Many thousands of plants, of the best show kinds, have been sent out this year at three shillings per dozen, and the most scarce of the very few good ones sent out last year at nine shillings.

The effect is, that hundreds of new growers have been created, as it were. The growers within two miles of London—and there are many who have started up within a short time—serve the London shops so cheaply with dry roots as well as plants, that the very best varieties were marked up for retail at sixpence each.

Hosea Waterer's splendid exhibition of *American plants*, in the Horticultural Gardens, is to be free to all the Fellows, and only one shilling admittance to the public. This is as it should be. There is the promise of a splendid bloom.

Mr. Lockhart has every reason to believe that he has discovered a *remedy for the mildew on the vine*, which desideratum he will have proved during the present season, and, if it answers its purpose in other hands, he will send it out next year.

The *Tulip bloom* has this year puzzled many of the growers. During the prevalence of the north-east winds, most people were fearful that shows were fixed too soon, several were put off a week; but we recommend all growers to keep the sun from the beds early, for if they are allowed to receive it, three or four melting days will make so much difference, that the bloom will be a short one, and none but the latest flowers can be exhibited.

National Floricultural Society, May 8th.—R. Stains, Esq., in the chair. Twenty-eight new members were elected, and thirteen proposed.

Amongst the articles exhibited, was a seedling *Azalea indica*, named *Pictura*, from Mr. Reed, gardener to W. Coombes, Esq. The censors gave it a commendation, the third degree of excellence. Free bloomer, good habit, medium form, large size, white ground striped with rosy purple. A seedling *Cineraria*, named *Prince Arthur*, came from Mr. E. G. Henderson, St. John's Wood. It received a commendation for an advance of form in that colour (rich crimson, the same as *Flora Mc Ivor*); habit tolerable, as far as we could judge from the size of the plant. A cut flower of a seedling *Azalea*, unnamed, came from a gentleman, Mr. Cathel, residing at Wavertree, near Liverpool. This is a promising flower of excellent form and good substance, but rather deficient in colour. The censors would like to see it again on the plant, in order to judge of its habit.

The Rev. Mr. Garrett sent a seedling Pansy of some merit. The censors desired it to be sent again in better condition.

Sixty seedlings of various kinds, but chiefly Cinerarias, were exhibited, and the above-mentioned were all the censors thought worthy of any remark. No first class prizes, or even certificates, were awarded, the censors one and all being firmly resolved that nothing shall receive a favourable opinion from them, unless it be decidedly superior to varieties already before the public. This will, or at least should, satisfy the exhibitors, who may not receive certificates for the articles they may send.

The rooms were ornamented, as usual, by collections of named plants in bloom, from the following exhibitors:

Mr. E. G. Henderson, of St. John's Wood, sent a choice collection of six new Cinerarias, viz., *Lady Hume Campbell*, white, blue tips, excellent form; *Marianne*, white, with purple tips (this obtained a certificate at the last meeting); *Mrs. Sidney Herbert*, pale rose; *Catherine Hayes*, blue tips, white ground, excellent form; *Catherine Seaton*, white ground, crimson border; and *Madame Sontag*, white centre, lilac tips. Besides these, on another table, the same gentleman sent a collection of twenty still older varieties.

Messrs. Henderson and Co., of Pine Apple Place, sent also a choice collection of new Cinerarias, amongst

which were *David Copperfield*, with a grey disc, belted with rosy crimson; *Lettice Arnold*, rosy purple and white, large, and of a compact habit; *Renville*, violet blue, with a belt of white round the disk; *Lady Gertrude*, deep blue self, broad petals, habit dwarf and compact; *Nymph*, white, with dark disc; *Pauline*, violet plum self, very distinct, fine form, and excellent habit. From the same firm came a splendid plant of *Azalea magnifica*, covered with its semi-double rosy crimson blossom; also, a fine high-coloured seedling *Amaryllis*, named *Professor Liebeg*; a pretty Heath, named *Victoria*; a hybrid allied to *E. aristata*; and the pretty *Cheiranthus Marshallii*, a hybrid with large golden flowers, of a good form; also, a pretty Geranium, named *White Unique*, which promises to be an useful bedding variety. Mr. Bragg, of Slough, sent a fine pan of Pansies in excellent condition. Mr. Epps an Erica, named *E. tricolor Eppsii*. Mr. Ayres sent some well-bloomed fancy Geraniums; and Mr. Ivery a Pelargonium, named *Lilac Unique*.

NEW PLANTS.

THEIR PORTRAITS AND BIOGRAPHIES.



ROUND-LEAVED MYRTLE (*Myrtus orbiculatus*).—*Botanical Magazine*, t. 4558.—We are glad to have here an opportunity of laying the whole management of the cottager's peculiar plant, the Myrtle, before the readers of *THE COTTAGE GARDENER*, from the works of the best and most practical gardener of the last, if not even of the present, century, *Philip Miller*. But we must, in the first instance, chronicle a few particulars relative to the family pedigree and connections, as is our wont in these biographies. Tournefort is the author of the name, which is of Greek origin, and is synonymous, or nearly so, with fragrance. Some modern authors have given out that Linnæus first named the Myrtle, which is not correct. Dr. Brown, in 1814, named all the plants which are related to the Myrtle, botanically, *Myrtaceæ*, which word is well translated in the present English

name of the order, *Myrtleblooms*. Of these there are more than twelve hundred species already described, some of which, as the Gum trees of New Holland, according to Mr. Backhouse, attain the height of two hundred feet, and "rise as nearly as high as the Monument without branching." Others, as the Akee of New Zealand (*Metrosideros buxifolia*), climb by their ivy-like roots to the tops of the highest trees on the island (See *COTTAGE GARDENER*, vol. 5, page 95). From these lofty aspirations in the savage wilds, Myrtleblooms descend into every conceivable stature to the size of our common Thyme, as in the Falkland Islands, where the Grove Myrtle (*M. nummularia*) carpets the ground. Notwithstanding such diversity, and the large number of species, Myrtleblooms form one of the most natural of all the natural orders of plants, and the easiest to recognise at first sight. Dotted entire leaves, in opposite pairs, and without stipules, but with a vein running round the margin, are the undeviating signs of a Myrtlebloom in vigorous health. The common Myrtle varies more than any of them in the position of the leaves, some being opposite and some not. But we hasten to lay Miller's treatment of the common Myrtle before the reader.

After naming the different varieties of the common Myrtle, Miller goes on to say, "These plants may all be propagated from cuttings, the best season for which is in the beginning of July, when you should make choice of some of the straitest and most vigorous young shoots, which should be about six or eight inches long; and the leaves on the lower part must be stripped off about two or three inches high, and the part twisted which is to be placed in the ground." "Then, having filled a parcel of pots with light rich earth, you should plant the cuttings therein at about two inches distance from each other, observing to close the earth fast about them, and give them some water to settle it to the cuttings; then place the pots under a common hot-bed frame, plunging them either into some old dung or tanner's bark, which will prevent the earth from drying too fast; but you must carefully shade them with mats from the heat of the day, and give them air in proportion to the warmth of the season, not forgetting to water them every two or three days. In about six weeks the cuttings will be rooted and begin to shoot, when you must inure them to the open air by degrees, into which they should be removed by the end of August, placing them where they may be sheltered from cold winds, whence they should be removed into the greenhouse in October, and be placed in the coldest part thereof, for they only require to be protected from severe cold.

"If these pots are placed under a common hot-bed frame in winter, where they may be screened from the frost, and have the free air in mild weather, the young plants will succeed better than in a greenhouse, and are not kept closely covered, which will occasion their growing mouldy and dropping their leaves.

"The spring following, these plants should be taken out of the pots very carefully, preserving a ball of earth to the roots of each of them, and every one of them should be placed into a separate, small pot, filled with light rich earth, observing to water them well to settle the earth to the roots; after which place them under a frame until they have taken root, after which they should be inured to the open air, and in May they must be placed abroad for the summer, where they may be sheltered from strong winds.

"During the summer season they will require to be plentifully watered, or be placed where they only receive the morning sun; for when they are too much exposed to the heat of the sun the moisture in the earth will soon be exhaled, and the plants greatly retarded in their growth thereby.

"In August shift them into pots a size larger, filling them with rich earth, trim the roots which are matted to the side of the pots, and loosen the earth from the outside of the

ball with your hands, that the roots may the easier find passage into the fresh earth. At this time you may trim the plants, in order to reduce them to a regular figure. Such of them as grow crooked should have slender sticks to bring them upright.

"Their branches may be pruned to form balls or pyramids; but then such sheered plants will not produce flowers, so it will be necessary to suffer a plant or two of each kind to grow rude for the use of their branches in nosegays, &c.; for it will greatly deface those that are sheered to cut off their branches.

"As these Myrtles advance in stature they should annually be removed into larger pots, according to the size of their roots. When they are taken out of the former pots, the earth about their roots should be pared off, and that within side the ball must be gently loosened, then place them in the pots, filling up the sides and bottom with fresh, rich earth, and give them plenty of water to settle the earth to their roots, which should be frequently repeated; for they require to be often watered both in winter and summer; but in hot weather they must have it in plenty.

"The best season for shifting Myrtles is either in April or August; for if it be done much sooner in the spring the plants are then in a slow-growing state, and so not capable to strike out fresh roots again very soon; and if it be done later in autumn, the cold weather coming on will prevent their taking root.

"In October, when the nights begin to be frosty, remove the Myrtles into the greenhouse; but if the weather proves favourable, they may remain abroad until the beginning of November; for if they are put in too soon, and the weather proves mild, they will make fresh shoots, which will be weak, and often grow mouldy in winter."

With the exception of omitting to direct good drainage and rough compost, we believe the above digest of the culture of the common Myrtle is unobjectionable. Twisting the bottom of cuttings seems a novelty, but that and the use of a joint or two of the two years' growth, was a common practice in Miller's time.

Myrtus orbiculata, which led to this notice, is an ever-green stove plant, a native of the Mauritius, whence seeds were sent in 1824, and plants raised from them in Kew Gardens. "Its flowering season," says Sir W. Hooker, "is November, when its Myrtle-like flowers, copiously nestled among the dark green foliage, exhale the most delightful fragrance." It is about six feet high, much branched, and very smooth. *Leaves* nearly stalkless, roundish oval, leathery, margin slightly curved back. *Flowers* with four yellowish-white, round, petals; stamens very numerous; style awl-shaped, longer than the stamens.

J. B.

THE FRUIT-GARDEN.

PEARS IN TRAINING.—Although much has been said of late in these pages concerning disbudding, we will not offer an apology for still pursuing the subject, inasmuch as the pear is a fruit of paramount importance to thousands, furnishing, as it does, an item of the dessert, second only to the pine and grape, during the dull winter months, and the early spring.

It is, doubtless, known to our readers, that it is not so well to pursue so severe a system of disbudding with the pear, as with such trees as the peach, the nectarine, the apricot, and the plum; and why? Simply because the pear has in general a much greater tendency to burst into lateral, and, of course, immature and unfruitful spray. The sap vessels, it may be fairly presumed, are larger, or at least the impetus must be greater, and it therefore evinces, under circumstances of luxuriance especially, a somewhat unyielding capacity, having a constant bias towards assuming the character of a tree, with scope to branch in freedom. Such facts must be familiar to many of our readers; but we think it useful to point to them in order that those of the rising generation may become familiar with reasons as well as rules.

What has been observed of the pear, however, only goes to show, that more restraint at the root, or a better and more perfect system of control, ought to be put in force—we mean as to the root action; for if unlucky horses break down the bounds of their pasturage, and commit trespass, we must put a clog on them, although they were not foaled with such an awkward appendage. Before detailing the kind of disbudding we consider necessary, then, let us advise all those whose pears are shooting too luxuriantly to open a trench, if possible, at the extremity of the roots, and even to cut a few of the extreme points away if the case is very urgent. The mere opening of a trench or cutting, as deep as the very bottom of the roots, and keeping it open for some weeks, is generally enough of itself to accomplish the end in view. We are aware that where the trained pears are planted in decorative situations, or parts connected with the dress grounds, such proceedings are resorted to with reluctance, as being unsightly, for so they are, and we fear that in such cases the advice here offered must fall through. These, however, are the exceptions which somehow beset every rule, and which we may, for the present, dismiss by observing, that ringing in such cases may be resorted to as a temporary expedient—not removing the bark, to which barbarous procedure we rather object, as being somewhat reckless, but simply scoring a ring or two here and there, according to the amount of luxuriance of the parts, which simple expedient will check the over keen impetus considerably for a few weeks. There are trees here which have been thus scored round four or five times in a season many years since, and on the stems of which may be counted well nigh a hundred such concentric scars, each one surmounted with the vegetable callosity peculiar to tree wounds, and which points to a descending current, which in its arrest produces the enlargement. We have never known any ill effects to arise from this practice, but, on the contrary, such trees will always become more fruitful.

There is here a Marie Louise pear, of some fifteen years standing, composed of two main branches, each starting about equidistant from the bole, and about equal in point of calibre and amount of foliage. On one of these shoots originally had been fastened a label, attached by a piece of strong wire, and the latter, having become completely concealed by the spurs and shoots, has become imbedded by the increasing bulk of the tree. Now, this side has not failed for several years to produce blossoms in great abundance, whilst the other portion has been comparatively barren; the ringed portion, moreover, always changes the tint of its foliage every autumn betimes, the latter becoming almost scarlet, indeed, the tint is admirable, whilst the other side continues green, or, at most, a dingy brown. How plainly this seems to point to enriched secretions, we need not here urge, and, also, what a hint it would seem to furnish to the hybridizer in his efforts to increase the flavour of fruits as well as their fecundity.

And now to the disbudding of the pear. No sooner have the trees ceased blossoming, than in healthy trees on free stocks, a lot of watery-looking and fast-growing shoots present themselves: such we would at once disbud, unless needed to fill some allotted space. This will, of itself, communicate a check to the root, which will be of much benefit to the shoots left behind; it must, however, be done speedily, for if suffered to remain until a strong reciprocity has commenced between root and leaf, an amount of vigour will have been acquired which will not be easily subdued. It is not during the very earliest period of the trees budding that so many spurs (which for awhile are convertible into either wood-shoots or bloom-shoots) break their buds; it is after a lapse of some three or four weeks, and consequent on the cause just described. Such strong young spray,

therefore, being totally disbudded, the trees may be left alone for a fortnight or so, when a few more overstrong shoots may be detected, and these we think it is not advisable to disbud; they may successively be pinched as they become about six inches in length, at the same time reserving every shoot most carefully, which, although somewhat stout, looks short-jointed. Such-like manipulations should be performed almost weekly until about Midsummer, when it will be time to think of training in, or of tying down the young shoots to be reserved.

Thinning the fruit is a most important and absolutely necessary procedure, if flavour and keeping qualities are desired. Those who think that such ordinary fruits as the apple and pear do not need thinning, or that similar results are not produced as with other fruits, are egregiously mistaken. Indeed, it matters not what the fruit is; a tree, be what it may, can only mature a given quantity; and any amount beyond, tends to deteriorate both flavour and size. However, the quantity any tree *can maintain*, depends on various conditions; and something more than a mere cut-and-dry formula is requisite in order to determine, first of all, the amount of well-developed and uninjured foliage duly exposed to the light; secondly, the root resources; thirdly, the certainty of an immunity from droughts; and, fourthly, the age and condition of the tree constitutionally; and whether its energies are in the ascending or descending scale. Any one of these, or any combination of them, must determine this question. We would not have them thinned away at once by any means, we must pay heed to the old proverb in this matter, "Many a slip, &c." Thin out then, we say, a little when they get as large as a show gooseberry; and again, and finally, soon after they have completed their first swelling.

In the midst of all these necessary procedures, which, although they may look so terrific on paper, may at least be carried out by the amateur readers of the far-famed little COTTAGE GARDENER, let us point to root as well as top management; and here we dread being suspected of blowing hot and cold, for we have to recommend a due attention to root moisture. Most pears, as they are ordinarily planted in our gardens, are in a condition to take care of themselves in this respect; but there are extreme cases, here and there, to be met with, in which watering would have been beneficial in dry periods, and especially a coating of mulch. We have known trees of such as the Gassel's Bergamot, the Crassanne, the brown Beurrée, &c., crack three summers out of four, in our younger days; whilst the flesh between the rifts would become completely indurated, and little superior to the very wood of the tree in texture; and all this owing to their being planted in a burning, hungry, and gravelly soil. This state of things used frequently to occur in the gardens around Wimbledon Common, the suburbs of which, although studded with gardens of the nobility and gentry, are of a very hungry and gravelly texture: famous in former days for small and stringy celery, for blue cabbages, well-clubbed brocoli, and for mildewed peas in autumn. It is very probable that those gardens are, in these days, improved in staple, for they require little more than an addition of the clayey principle, with an increased depth, to render them fertile. There can be little doubt, therefore, that the cracking of pears is owing to injurious droughts; and that in all such soils as we have been describing, the application of water during droughts is absolutely necessary, and of mulchings extremely beneficial. Water, for such purposes, should be always tepid, and soapsuds and house-slops may be liberally added.

In concluding, for the present, our remarks on pears, it may be advised, that all shoots of a doubtful character which may burst forth from any part of the stems, may be pinched at any period: this can do no harm.

Towards the end of August we shall have to recommend a rather general stopping; but of this more in due course. Let all insects be kept in subjection, or rather extirpated. Soft soap for the oyster scale, and sulphur for the red spiders, with careful hand-picking for all caterpillars.

R. ERRINGTON.

THE FLOWER-GARDEN.

MOST BEDDING PLANTS are now in their summer quarters, in most places, all over the kingdom; some are not quite ready yet to stand out, having been lately brought in, or propagated; or, some new dodge has been heard of, that must be tried this season in some of the beds, so that the stock intended for such beds is now a drug on hand; but take care of them, they will come in useful by and by. Here I keep the shop open to the very last day, in order to embrace any new plant or practice that may cast up; and this season, it was only on the last Monday in April, that the final arrangement for planting some parts of the garden was signed and sealed for execution. Then it was that I got in a little, rather new, yellow bedder for the first time, and if it answers as well as is said of it, we shall be satisfied. It is a small-leaved and a small-flowered *Evening Primrose*, or *Oenothera*, called *prostrata*, or trailing. It was proved, last year, to be an excellent bedder of the lowest class. My worthy employers saw it, last June, beautifully in bloom at Bedford Lodge, the celebrated flower-garden belonging to the Dowager Duchess of Bedford. As I did not see the plant myself, and wishing to introduce it into a very particular and new arrangement, I wrote to Mr. Caie, her Grace's gardener, to ask him the particulars. Fortunately, he is the first authority I know in flower-garden plants, and anything that way is A B C to him. He said, "I could have answered your questions at once from my own experience, but I thought it better to have another person's opinion of the *Oenothera*, who had, also, grown it last year; more especially as the information is for a person like you, &c., &c. Like all the *Oenotheras*, *prostrata* delights in a seclusion where the air is steady, and loaded with moisture to a certain extent. May will be time enough to plant it out, and, if the plants are large, they will begin flowering at once, and will continue to do so for the summer and autumn months." I waited patiently a week for this welcome answer; and it is worth while to wait a whole month for an answer to a particular question in gardening. There, too, is a glimpse of how our columns, in answer to correspondents, are filled up, week after week, at great expense and trouble to each and all of us; *but we keep to the collar*, and are determined to get the best and soundest answers for each and all of them, by passing private letters amongst ourselves and our friends, and if some of our readers get fidgety at times, because the answer is not given over the counter at once, why, we must put the best foot forward and learn patience. Now this *Oenothera* is permanently adopted into the flower-garden on the above authority—my own light weight into the scales likewise—for I have got in four hundred plants of it already. Whenever you get a new thing, be it a summer dress or a new plant, try and make a sensation with it the first season or two; after that all the world has it, and you only come in as an unit. That is the way to cut diamond with diamond.

Last summer I saw one of the poorest looking white beds one could imagine, and *so weedy*, that I put it down as good for nothing; since then, one of our readers was answered that this plant was but so and so for a bed; but we ought to have as many eyes as old Argus himself to see and know every thing; at any rate, I ought to have known, long before this, that there is a most excellent variety of this same white plant I am writing about, for I see it put up in comparison to the

white *Campanula* bed, by a writer in this May number of the *Gardeners' Magazine of Botany*. He says, "we are not quite sure that the best variety of the double *Matricaria* is not equally good, and much more durable; at least, we do not wish to see a finer bed than we had of it last season." So be it; and I am very glad of the news, as I can put as much faith in the writer, as I have said I can in Mr. Caie. The best variety of *Matricaria* ought to be sought after forthwith. It is a plant that is not likely to slip through one's fingers, and will increase as easily as any plant in the catalogue. I saw another suggestion, some time since, in the *Gardeners' Magazine of Botany*, which made me blush for my own shortcomings, for not having done justice to the good old bedder *Bouvardia triphylla*, which is one of the very best of the very old things of that class; and for those who do not know it, nor its right treatment, perhaps it will be enough to say that it needs exactly the same kind of treatment as *Cupheas*. Every one knows all about *Cupheas*, because they are of recent introduction. Every one, however, is not some one, who really knows nothing of *Cupheas* or *Bouvardias*; and he, or she, must be told that both are slender woody plants, very nearly hardy, will do to be kept nearly dry all the winter, like the blue *Salvia*, will grow in the spring from young cuttings as easily as those of *Verbenas*, and just in the same way. They will, also, grow from every morsel of root except the small fibres. Whether from root or top-cuttings they will bloom the same season, and oldish plants of both will answer capitally for the centre of a bed of them, and the young ones all round. The whole will flower till stopped by the frost. The *Bouvardia*, from spring cuttings, requires to be planted from four to six inches apart each way, and will rise from six to ten inches high, according to the strength of the cuttings. The flowers are bright red, and altogether the plant looks well clothed in a bed, if planted thickly enough. Old plants of it, kept from year to year, would make a bed eighteen inches high; and the plants might be grown in time to make a growth of a yard high, and flower all over from top to the bottom, in the open border, in front of a wall or hothouse. There are a few plants of it here, on the border of a conservatory wall, getting up to the yard height, and having the look of a currant bush in winter, when the leaves are off.

Speaking of old plants, reminds me of a complaint we have had lately from a lady, who tried "all means and all kinds of soil" to get the Arum plant (*Calla*) into flower, "but all to no purpose." Those who have a pond or any water in or about their garden, will find this an excellent plant to turn out there, and this is the best time to remove it. It will do six inches below the surface, or it may be as deep as twenty inches, or more. There is no plant more accommodating; and if all of us cannot build water stoves for regal water lilies, we need not be altogether behind in water plants in the open air. But not to lose sight of this *Calla*, it is really worth while to try to make out the cause of the failure in flowering it. If I was asked for a receipt to keep it from flowering, I would say at once push it into full leaf, and then cut them off, and let the plant go dry; do this three years running, or three times in one year, if it persists in growing, and that must settle the question sooner or later. Can it be that the plant has been too well treated? I once knew a gardener who could not flower *Hedychiums*, but no one could grow them better. Fine large glossy leaves they had, but not a flower from a dozen of them. He could, and often did, keep them green all the year round; and I know there are some bulbs whose nature is to go to rest for several months, and yet may be kept green for three years in succession; but, then, they never bloom that way. It strikes me, therefore, that this *Calla*, or Arum plant, has been kept growing out of season, forcing it, as it were, either to

expend its whole strength in making leaves, or supplying those already made, and thus leaving no room for flowers. Six months in summer, or seven, if it is grown during the winter, is the longest period that it should be allowed to keep green. A period of growth beyond that is very likely to derange its natural course, and so keep it barren of flowers. Suppose a plant of it has thrown up leaves last April, after a winter's rest, and these continue to extend up to Midsummer, or later, without flowering, I would place the pot in a large saucer to hold water under it constantly to the end of August; then, for the next two months, I would allow it the ordinary supply for other plants, just keeping the soil moist; then, in October, as the plant did not flower this season, it is very likely that it would not refuse to grow on the whole winter, and be as bad next year; but in October, I would turn the pot on one side, and compel it to rest for want of water. We all say, in a general way, keep such plants as this, and bulbs, watered as long as the leaves keep green; but here is an instance to the contrary, and there are many more exceptions to the rule. It is very possible to keep a gooseberry bush, or any other deciduous tree, in leaf most part of the year, and so with other plants, but that is unnatural to them; and when once a bulb, or *Calla*, *Canna*, *Ginger plant*, and all such, have made a full growth of leaves, and have had time to ripen them, it does them no harm to force them to cast their leaves, even if they look in full vigour at the time. But let us follow the *Calla*: after October, and the leaves all gone, keep it perfectly dry till the spring, March or April, then shake the soil from it, and part the little finger-like roots, or tubers, for nursing plants, and put the old root at once into the flowering-pot, which is better than shifting it from time to time. On the other hand, let us say that the plant began to grow last autumn, and was going on slowly through the winter and spring up to this period, and is still without flowering. It is now very natural that the increased heat of the season may cause it to make fresh leaves, and so go on growing for the rest of the summer. This would be fatal for the bloom next year. The true treatment is to withhold water by degrees, and for a month or six weeks to keep it on short commons. Then, if the leaves do not turn yellow, compel them to do so by turning the pot on one side, in some shady place, so that it may linger on a little longer before it is quite dry. This is necessary in summer, though not in the autumn; as if it was stopped suddenly in May or June, the chances are that it would commence growing again immediately.

NEW PLANTS.—There are two most excellent half-hardy shrubs for the flower-garden just getting into circulation, and which every one who can afford to pay for them, ought to possess this season—I refer to *Escalonia macrantha* and *Cantua dependens*. The former is now selling at from 2s. 6d. to 7s. 6d., according to the size of the plant; and I believe the *Cantua* is charged at a guinea each, and was exhibited at the great May fetes. I shall not allude to either of them any farther, at present, but will go on to say that this is the best time in the year to plant out any, or all, of the newer hardy trees and shrubs that have been recently bought in, or have been otherwise reared in pots. It is a good plan to keep them a little above the general level of the ground around them, as the hole, or pit, filled with good fresh soil to receive them, is likely to settle more or less in a few years; but to raise them up on mounds, as some have recommended, is perfectly ridiculous; neither would I recommend wide holes for them at first. Another great error is, in planting choice single specimens. Two feet across is quite enough to begin with for the largest tree I know, if it is to be planted out of a pot. Then, after two years' growth, I would make a ring round this eighteen inches or two feet wide, fill it with a good compost, and so on for the next ten years, adding a little

every second or third year as the plant extends its roots; thus a constant stimulus is provided instead of a large allowance at once.

D. BEATON.

GREENHOUSE AND WINDOW GARDENING.

HYBRID RHODODENDRONS.—Since the introduction of the *Rhododendron arboreum* from Nepal, where it is said to grow to the size of a tree, very successful efforts have been made by the hybridist to combine the magnificent flowers of *arboreum*, with the hardy qualities of *ponticum*, and allied species and varieties. If anything had been wanting to awaken in the admirers of flowers a strong love for these beautiful productions, that want would have been more than met in the splendid exhibitions of American plants that have taken place at the Regent's Park Gardens, and which are again to be repeated at the two great Metropolitan flower shows this season. In my boyish days, like most of our readers, I have feasted on many a flowery scene in Fairyland, and often inquired and inquired again, how access was to be gained to such happy climes; but the scene beneath the large awning in Regent's Park, last season, far exceeded my wildest visionary dreams, proclaiming, as it did, that nurserymen and botanic curators combined, could, when they chose, exert an influence as potent as the magician's wand and the enchanter's spell. I say *combined*, because, gorgeous as the plants appeared, they would have been deprived of half their beauty, but for the manner in which they were grouped, and the admirable disposition, hill and dale, mount and valley character of the enclosed ground. It is said that nothing on earth is perfect; and the connoisseur would, no doubt, have wished to have seen other colours different from what American plants can supply, so as to have given more of a varied enchantment to the delightful prospect; but I shall be agreeably surprised, if, with American plants alone, such a scene of beauty can be surpassed.

But why, on such a subject, give us this digression on American Plant Exhibitions? I question if I can answer your query satisfactorily; but, were I to try, I should reply, for two reasons:—First, because Hybrid Rhododendrons constituted no inconspicuous feature there; secondly, because truth, even in matters of taste, is most surely promoted, *not by direct violent attack upon error, but by undermining it*; and as the importance of maintaining unity of expression in our plant-houses has been several times alluded to, I would humbly, but confidently leave the recollection of these exhibitions, and the study of the forthcoming ones, if similarly planted and arranged, contrasted with the mixed-pot-and-plant-out-system, which often obtains in conservatories, to work out their legitimate effect, in infusing a higher sense of order, and a more refined taste among amateurs and young gardeners.

From circumstances too tedious to mention, I have had little to do with *Rhododendrons out of doors* for a number of years; but that little has convinced me, that in all close and hungry soils they will succeed without much trouble, without any assistance from peat, and as they are poisonous to most animals, nature has given these the instinct to let them alone, thus qualifying them well not only for undergrowth in our ornamental woods, but also for affording shelter to game, when almost everything else would be sure to be eaten up, by what, in many instances, despite the favour bestowed upon them, we gardeners designate as *vermin*, and the multitude of which, in some districts, is rendering wire-netting as necessary for the protection of peas and cabbages, as twine-netting used to be necessary for keeping the blackbirds and thrushes from the cherries. Next to a peat soil, Rhododendrons seem to thrive best

in stiff clays, with a fair proportion of leaf mould, or decomposed cow dung. The greater proportion of these hybrids, however, though hardier than *arboreum*, are, nevertheless, seldom seen in their full beauty in the open air, unless in favourable seasons and situations. They bloom somewhat earlier than the hardy species, at least, the most of them do; and spring frosts and cold rains alike destroy or impair the beauty of the blossoms. The most of the best of them, in this respect, are only a few shades hardier than the Camellia, and although that will flourish as a shrub in warm parts of the south of the island, and will exist tolerably well farther north against any wall except a south one; still, as these flowers are produced early, the amount of covering and protection necessary to avert the evils of frosts and rains, more than neutralises the interest that otherwise would attend such a mode of cultivating them. Just so with the Rhododendrum Hybrids. To be seen in their full beauty, they must, like the Camellia, receive the protection of glass, if the flowers are wanted at an early season; and be defended from wet and bright sunshine, if wanted at a later period. A winter conservatory garden, such as the *Crystal Palace* might become, where the extreme of cold should be excluded, without greatly elevating the temperature by artificial means, would constitute for them an appropriate home, and there they would impart a massive grandeur, which many rarer and costlier plants would fail to produce. These plants, when well set with flower buds, and grown in pots and tubs, can be forced successfully any time after Christmas, and much more easily than the common varieties, while in the appearance of the two there can be no comparison whatever.

The great defect they are alleged to possess, is uncertainty in blooming them when growing in pots and tubs, so much so, that some have even stated, that the *arboreum* itself could only be expected to bloom once in two or three years. This conclusion was more easily arrived at from the fact, that Messrs. Knight and Perry, who were among the most successful risers of hybrids from the *arboreum*, and who possessed the finest plants of the latter in the country, did not by any means succeed in blooming them continuously year by year—nay, to my own knowledge, several years elapsed before some of them at times showed trusses of bloom. I believe that it is quite as natural for the *arboreum* itself, and the hybrids from it, to bloom every year, when they have arrived at the flowering state, as for any other plant whatever, and that any little difficulty is owing to our own imperfect knowledge.

It would give me much pleasure to throw some light upon the subject, so that we could rely on a fine display for our conservatories in spring and early summer; but I must content myself with mentioning a few facts, and leave our friends to form their own conclusions; well aware that flower buds can only be formed under the concentrating influence of heat and sunshine. Two years ago I placed some nice little plants, obtained several years before from Mr. Knight, and which had previously flowered with me, close to the fruit glass of a conservatory, turning them frequently, so that all parts might have equal access to light, hoping that by this means, the bloom buds would not only be larger, but earlier. I gave them every encouragement, until the shoots seemed to stop from elongating, and the terminal had seemed all right for yielding a fine mass of flowers the following season. The plants were removed from the conservatory in the end of June, were sheltered at first, and then exposed fully to the sun towards the end of July. No second growth took place. The buds looked well until about mid-winter, when smaller ones began to appear from the base of the principal one, and, to make a long story short, I had comparatively fewer flower trusses than I thought I had fairly worked for. Last

season I thought I would change the tactics with my few Hybrid Rhododendrons. After yielding the benefit of their too limited supply of bloom, the plants were placed in an airy veranda, with glass in front, until the middle of May, and there they grew but little. They then stood a fortnight in an open veranda, just to shelter them, more from the sun than from cold. They were then moved into a place, out of doors, sheltered all round, but where the plants would receive the full benefit of the morning and evening sun, and the full force of its rays at mid-day, standing at no great distance from a south wall, and consequently receiving, even from that position, a certain amount of heat and light from radiation and reflection. The pots were not plunged, but they were top-dressed with cow dung; and over the cow dung and hanging over the sides of the pot, were placed green moss, alike to save the roots from being parched, and to prevent the necessity of frequent waterings, and thus, by causing the loss of moisture by evaporation to proceed chiefly through the stem and foliage, to render the juices more highly concentrated and organisable. Just before winter they were removed into a cold greenhouse, where no artificial heat had been, or could be applied, and for more than two months, their appearance met my highest expectations. Some of the plants presented a most brilliant appearance. The flowers, in general, were very large, and beautifully dotted, and round shaped. I had no names with them, but they are most beautiful things. Many of the single blooms were $2\frac{1}{2}$ inches in diameter; a single truss contained upwards of twenty-four of these, arranged in the shape of a cone, the base being from $6\frac{1}{2}$ to 7 inches in diameter, the cone, from the centre of the base to the apex, being the same in height, while a line, stretched from the base on one side across the apex to the base on the other, measured fully 15 inches. Some very dark spotted kinds were smaller in the flower, and fewer flowers in the truss. One plant of a beautiful light spotted variety, and the individual flowers not quite so large as those described, had sixty-four trusses, each in a cone shape, expanded at once. The height of plant, with pot, was six feet, and the diameter of the head four feet; size of pot fifteen inches by twelve.

Now, as I said, I merely mention these things as facts. I build upon them no sure theory as to culture. I have only, myself, a very misty perception as to the true system of the pot culture of the *arboreum*, and hybrids; for I must tell you, that beautiful as most of my plants were, two of the finest plants, subjected to exactly the same mode of treatment, did not bloom at all, and had not done so the year previously either. I may mention that none of them had been shifted for at least three years, and in this respect, too, they had equal treatment; the compost being three parts peat, and one of fibry loam, with half a part of sand, charcoal, dried cow dung, and pieces of broken brick in equal proportions. Could we only flower these splendid things regularly, as easily as we bloom a hardy *Rhododendron ponticum* or *hirsutum*, they would be much more in demand for decorating our greenhouses and conservatories in early spring and summer.

Considerable difference exists as to the *intoxicating* nature of the honey produced from the flowers of the Rhododendron, as the effect produced upon Xenophon's 10,000, in completely paralysing them, is ascribed by one to Rhododendron, and another to Arabia pontica. Be that as it may, the quantity of honey water secreted in the bottom of the flower of the *arboreum*, and some of its hybrids, is very remarkable. For several days in succession, by reversing the flower, I have obtained a small teaspoonful a day, which was very delicious to the taste; but I thought had more of a *muddifying* than a clearing effect upon the brain.

R. FISH.

HOTHOUSE DEPARTMENT.

EXOTIC STOVE PLANTS.

BEGONIA CULTURE—(Continued from page 88).

Soil.—The first thing to attend to when beginning to cultivate any plant, is to procure and prepare the proper compost, in which experience has proved the particular family of plants will grow and flower best. Without this foundation be attended to, it is in vain to look for success, though every other adjunct be present. The compost suitable for this beautiful tribe is formed of turfy loam one part, sandy peat one part, and vegetable mould one part, or, if that cannot be had, use half a part of well-decomposed hotbed dung. These may either be mixed together, and turned over frequently for twelve months, or the different materials may be kept separate in the compost yard, be turned over for the same time, and mixed at the time of potting without sifting. If the loam and peat are not naturally sufficiently sandy, add as much as will give it a sandy character. This is a necessary article, and the silver sand is the best. If river, or pit sand of any other colour is used, it should be put through a fine sieve. Another needful point to attend to, is to have the compost in neither a wet nor dry state. A good test of this is to take up a handful, give it a gentle squeeze, and let it fall upon the potting bench. If it adheres together till it reaches the bench it is not too dry, and if it falls in pieces when it reaches the bench it is not too wet.

The next thing to provide is the *drainage*. Clean broken potsherds is the most common, and the best material for the purpose. In old-established gardens this material is generally but too plentiful. For a new place a supply may be easily procured from the pottery yard, which might be ordered at the same time as the pots, for this especial purpose.

Propagation. By Cuttings.—Whenever they can be had the best cuttings are the young shoots. Prepare, first, the cutting pots by placing a piece of potsherd something less than the bottom of the pot, place a few smaller pieces upon it, and upon them an inch of still smaller pieces, cover the whole with a thin stratum of moss, or the fibrous parts of the peat and loam. Then fill the pot to within an inch of the top with the compost previously passed through a sieve with a medium-sized mesh, then fill the remaining inch with pure silver sand, in a moderately dry state; give a gentle watering, to settle it firm, and it is ready for the cuttings. Take these off with a sharp knife, using the tops only, where the cuttings are plentiful; cut off the lower leaves close to the stem, without wounding it; make them not more than two inches long, finishing by a clean horizontal cut just below a joint. Allow them to lie for two hours, exposed to dry the cut ends, and then insert them in the sand with a small stick, filling up the holes with a little dry sand; give another very slight watering, and let them stand for an hour to dry the leaves and the surface; then fit a bell-glass over them in such a way that the leaves of the cuttings may not touch the sides of the glass. If cuttings are scarce, the shoot may be cut half way between each leaf, and the leaf, with a bud at its base, may be formed into a cutting; it will soon root, and the bud will grow and form a plant. Some kinds will grow from leaves without a bud at the base. We have done this successfully with the leaves of *B. albo coccinea*: the leaf-stalk formed a callosity, or swelling, at the base, and soon sent up, through the sand, several shoots. This is certainly a curious phenomenon. Where, it may be asked, did the buds for the shoots exist? Is the leaf-stalk full of them? It would seem so; for whether the leaf-stalk was left long, or cut off short, close to the leaf, the shoots were still produced.

As soon as the cuttings are planted, whether made of the young tops of leaves with buds at their base, or with

a leaf and stalk only, they must be placed under a bell-glass or hand-light, and be either set upon a heated surface of sand, coal ashes, or pounded charcoal, or the pots may be plunged into a heated bed of tanners bark, with the cuttings covered by a bell glass fitted within the edge of the pot. Shade from bright sunshine, and as soon as they appear to be growing, give air for an hour in the early part of the day. If they bear this without flagging, give an hour's air in the evening. In a week or two, increase the air to two hours, morning and evening, for a week longer, then examine them to find out if they are rooted, and as soon as that is so, pot them off singly, immediately, into what are called small 60's, which are pots nearly two inches across. Replace them under hand lights for two weeks, keeping them close and warm. In this place they will soon form fresh roots, and should then be gradually inured to stand the full light of the sun, and then be placed on a shelf near the glass in the stove, duly attended to with the necessary quantity of water, heat, and air, till they require re-potting.

By Seed.—All the tuberous rooted kinds of *Begonia* may be increased most successfully by seeds. When they are so raised they form the best plants. This is more particularly the case with the new *Begonia cinnabarina*. Though they will all propagate by cuttings, the plants so raised are more liable to perish in winter than if raised from seed. Gather the seed as soon as it is ripe, sow part immediately in pots filled with the compost, sifting a little very fine to cover the surface, press it gently down with a circular piece of smooth wood, scatter the seed upon it, and over the seed put the thinnest possible covering of the finely sifted soil, give a watering through a fine-nosed watering-pot, and place the pots in a heat of 75°. The seeds will quickly germinate, and should then be placed near the glass shading from bright sun. Water must be given, but very carefully, or the young plants will fog off. Keep them growing as long as possible, till the short days arrive, then they will begin to show symptoms of ripening off. Allow the leaves to turn yellow, and pick them carefully off as they decay. When they are all gone, give no more water, and keep the seedlings through the winter in a dormant dry state till spring, in a moderate temperature, say 55° to 60°. In March, give a little water, and increase the heat to 70°. If all has gone on right, the young tubers will then begin to grow again, and as soon as they have attained two or three leaves, pot them off singly into the smallest pots, in fresh compost well drained. Continue to repot as the roots reach the sides of the pots, and it is very likely some of the strongest will flower the same year.

The remainder of the seed should be sown in March, if any accident or other cause prevents those sown the preceding year from growing. Treat the seedlings from the spring-sowing exactly in the same manner, excepting a few of the strongest, which may be potted as soon as they are fit, and then will make strong bulbs that are sure to flower the year following.

By Division.—Some of the dwarf kinds, and some of the tuberous-rooted ones, may be increased by division, particularly *B. hydrocotylifolia*, *B. ramentacea*, *B. Martiana*, and *B. Evansiana*. Those that are not tuberous-rooted should have a portion of roots to the divisions. When they are divided, place them, after they are potted, under a hand-light in heat, shading and keeping them close for a week or two till new roots are formed; then inure them to bear the full light and air by degrees, and afterwards treat them as recommended for the cutting at the same age.

Summer Culture: Potting.—The right time for potting is about the end of February. Previously to commencing this necessary operation, have the compost placed in a warm shed to air and become just dry enough. Pre-

pare the pots, if new, by steeping for an hour in tepid water, and then set them in a proper place to dry; if old, let them be clean washed in tepid water, and set to dry likewise. Have the drainage material clean, dry, and warm also. When these are fit to use, commence potting. As this is a season when the greater part of the stove-plants require the same operation, the proper quantity of these potting materials should be in a state of readiness. Then bring the plants, a few at a time, to the potting bench, and give them a liberal shift, draining the pots, as described above, for those for cuttings. The shrubby varieties should now be pruned and tied out, so as to form neat bushy plants. Every stem and leaf-mould be clean washed with a sponge or soft brush. This will clear off the insects, if any, with the dirt and dust; then give a gentle watering, and return them to their place in the stove. The tuberous-rooted species should be brought out from their resting place, examined, dead ones thrown away, and living ones potted into pots of a proportionate size to the tubers, covering them about half an inch deep. Give these no water for a week after potting, and then a very gentle one. When the shoots begin to make their appearance, a little more water may be given, and gradually increase the supply as the plants advance in growth. The heat proper for them in this stage is, by day, 60° to 65°; by night, 55° will be sufficient, the thing to aim at in this early season being to grow them slowly, so that they may make roots previously to being stimulated by a high temperature to grow rapidly. If a great heat is applied at the first, the shoots will have nothing to exist upon but the juices contained in the wood or tuber in existence at the time, the shoots will, in consequence, be weak, the leaves pale, and the life even of the plants endangered. Nature herself points out to us that a low temperature, at the first, is the best for the vegetable kingdom. We have a winter for rest, a spring to commence to grow slowly, and the summer to advance with vigour in the work of annual growth, and then the autumn to gradually bring on the period of rest. Even in the hottest parts of the world there is a variation of seasons approximating, in a degree, to these seasons of growth and repose; and the cultivator, if he wishes to succeed, must not deviate from Nature's laws. But to return to potting. As soon as the pots are filled with fresh roots, give the plants a second shift. This will generally be sufficient for one season. If fine specimens for exhibition or ornamental purposes are required, a third shift will be advisable. Six weeks' time, or thereabouts, according to the state of the plants, may be allowed between each shift. The proper treatment, with regard to watering, giving moisture to the air, &c., must be daily attended to; the particulars we need not repeat, as we have repeatedly given them in treating of other stove plants. The heat in summer should be from 65° to 75° by day, and may, with advantage, be allowed to fall to 60° by night.

Winter Culture.—When the days begin to shorten, the plants must have less stimulants in the shape of water and heat. The tuberous species must be allowed to go to rest completely, and should have water given to them only just sufficient to prevent the bulbs from becoming too soft or mealy. A shelf in a dry, cool part of the stove is a good wintering place for them. The shrubby ones should have no more water given them than will keep them from flagging. An exception to this rule, in a degree, must be followed with such species of *Begonia* as flower in winter or early spring. This exception applies more especially to *Begonia manicata*, *B. parvifolia*, and some others, which may be easily known by their not flowering through the summer.

T. APPLEBY.

FLORISTS' FLOWERS.

MR. GLENNY'S OPINIONS ON FLORISTS' FLOWERS.

(*W. B., of Manchester.*) CINERARIAS.—Psyche, Pythens, Gladiator, and New Rainbow. The first a good blue for bedding out, the colour and habit alone recommending it. The others worthless.

(*D. M., Dorset.*) PANSY.—Phenomenon. Too thin, eye breaks into margin. No use.

(*P. P. James.*) GLOXINIAS.—Not one of them new.

(*H.*) CINERARIA.—Marianne. A good advance; quite an acquisition.

(*W.*) MIMULUS.—A monster in size, and very gay, but no advance in form. It should be sent out at the price of an approved flower.

AURICULAS, done blooming, place in their summer position behind a low north wall, giving but little water, and that only in dry weather.

POLYANTHUSES will be greatly benefitted by being placed in the same position, and saucers put under the pots. We have repeatedly proved the advantage of this point of culture. It keeps the roots cool, and prevents the attacks of that deadly enemy the red spider.

HOLLYHOCKS.—These stately autumn flowers require every attention during this, to them, early part of the year. If not already done (as advised before), place some short dung round each plant, and give copious waterings in dry weather. Stake and tie early, or a fine flower shoot might be broken off unexpectedly. Where the shoots are numerous a few may be taken off from the named varieties, put in as cuttings in a gentle hot-bed, struck and planted out immediately. These make fine strong plants for the next season. Seedlings should now be planted out in rows, six inches apart, as soon as they are strong enough, and will then be strong to stand the rigour of the winter.

PANSIES in bloom shade from bright sunshine; put in cuttings early, to ensure good plants to bloom in autumn. Transplant seedlings as soon as they are large enough for that purpose.

PINKS place sticks to, and tie loosely. If not yet done, lose no time in giving them a top dressing.

VERBENAS for exhibition in July or August give the last potting to. Place sticks to and tie out those in a forward state for exhibition next month.

TULIPS continue to shade, to prolong the season of bloom as long as possible.

WATER freely all florists' flowers yet to bloom. The dry weather appears to be set in, rendering a liberal supply necessary.

T. APPLEBY.

THE KITCHEN-GARDEN.

ROUTINE WORK.—*Basil* and *Sweet Marjorum* plant out on rich, warm borders, and make an out-door sowing. Thin out *Beet*, and sow *Borage*. Prick off *Borecole* and *Brussels Sprouts*, as well as all kinds of *Kales* and early sown *Brocolis*. Plant out in succession a few and

often of the spring-sown *Cauliflowers*, and duly encourage the growth of previous plantings, by applications of liquid manure. Leave a portion of the early *cabbage stumps* for producing a summer's crop of sprouting cabbage, and plant in succession, and make another sowing. Plant out *Capsicums* also, and make another sowing of *Carrots*. Continue to prick in succession the principal crop of *Celery*, and encourage the growth of the early by frequent applications of liquid manure. *Celery* under glass for early culinary purposes, will require very liberal applications of water; the bleaching earth should be applied early, and a watchful eye kept over the green fly, and the various aphides, which are apt to be very prevalent among early crops—washing with soap-suds, and fumigating with tobacco, are the ready means of eradicating such pests.

Sea-kale should, at this season, have some care bestowed on it; the crowns, if they have not already had their final thinning, should be attended to at once, it should be kept well surface-stirred and loose, and its growth and all bloom-stalks, with the exception of one or two intended for seed, carefully cut off, the earth about it should be kept freely encouraged by frequent applications of good liquid manure, with salt dissolved in it. Such treatment will produce fine, luxuriant plants, and strong crowns for the next season's forcing. Single out the seedlings now up in drills in due season.

Rhubarb being a gross feeding plant, great luxuriance may be obtained by the liberal assistance of strong liquid manure.

Plant out in succession *French Beans* and *Scarlet Runners*, and the late varieties of *Peas*, and sow early *Turnips*. Dredge the growing crop with charred dust, to prevent the ravages of the fly and encourage a free growth. Single out in due season. Encourage the growth of *Onions*, and all spring-sown crops, by frequent surface-stirrings; do not allow a weed to make its appearance in any part, or the earth's surface to get bound or caked. *Lettuce*, mark for seed. Sowings should, for the summer months, be made thinly in shallow drills, and be duly thinned out, which often answers the desired purpose much better than transplanting in the heat of summer. The same plan also answers for *Cape brocoli* and late *Cauliflowers*. If any fear is entertained of the root-grub, apply soakings of soap-suds and strong soot-water, which, intermixed, is a preventive against the ravages of the grub, and an excellent stimulant to the plants.

FRAMING.—Continue to top up the linings systematically; apply air previously to the rays of the sun falling on the glass; shut up early of an afternoon; keep the vine tolerably thin, and regulate the crop of fruit to the strength of the plants.

Melons full-grown, and about changing colour, should be freely aired, and a small portion left on at night, as without air applied after a long dull, sunless, time, the fruit very frequently cracks open, after which they are spoiled and worthless.

Mushroom structures should now be kept cold and shaded; the interior damped with cold water, and the surface of the beds, if dry, should be sprinkled with tepid water.

JAMES BARNES.

MISCELLANEOUS INFORMATION.

HARDY HERBACEOUS PLANTS SUITABLE FOR SPRING DECORATION.

(Continued from page 101.)

HAVING mentioned the plants I have successfully used for white, scarlet, and yellow beds, I now come to one of a mixed character, and shall introduce a well-known florists' flower for that purpose—the *Pansy*, than which I have found nothing more suitable. I do not mean the fancy varieties with high-sounding names and delicate habit—

these I would allow the enthusiastic florist to retain, nurse, and keep away the mildew in August if he can. For my purpose I sow seed from the best flowers I can obtain, about the end of June or beginning of July; if sown thin, the seedlings stand in the seed-bed until November; but if too thick; they are pricked out to some suitable place three

or four inches apart. Their more healthy appearance and sturdy habit easily distinguishes them from cuttings of the more puny varieties, containing a greater number of good points essential for an exhibition stand. In my case, an easy growth, and luxuriant habit, with a tolerable handful of flowers of medium quality on each plant, is of more consequence than two or three blooms of first-rate excellence. Healthy-looking seedlings planted in the autumn, when the summer flowers are cleared away, make the beds look partly furnished all the winter, the foliage being quite as showy as that of most plants of more aspiring claims; and in May they will look as if it were a pity to disturb them for the season; but cruel as it may seem, it must be done. Other things must then be planted amongst them, and unless some one seems more than usually good, the whole had better be sacrificed in June, when the permanent summer crop has taken hold of the ground; but by that time pods of the first flower will have ripened their seeds, which save and sow, rejecting of course all that is bad. Seedling pansies are also well adapted for planting amongst other things requiring some temporary ornament for the early summer months, as the tea and china roses, &c.; besides they make a very good edging around any permanent bed. I have several beds temporarily planted with pansies, which promise in a few days to look tolerably well. Various causes prevented my planting them until the spring, otherwise they would by this time (the 1st of May) have been more gay; but I intend planting verbenas, &c. in amongst them, and at the proper time will sacrifice the pansies as I have done on other seasons.

The next useful flower in mixed colours is the *Polyanthus*, but the treatment of these is different. They do not propagate so quickly as pansies, so the old plants must be preserved; this is attended with but little trouble, as they have done flowering by the time the ordinary bedding-out stock is required to be put out, but they must not be crowded together under trees, or in any exposed spot where they may be trampled to death at a time when they are not conspicuous as ornaments; but let them be carefully separated and planted in the reserve garden, a place I shall speak of hereafter, and there they can form those embryo buds from which the next season's bloom proceeds. The same treatment will serve the whole of the *Primrose* tribe, the single as well as the double varieties of which are eminently qualified for the duty of furnishing a spring display. In fact, the double lilac often blooms in autumn and all through the winter, but I have never got it to bloom in autumn when it is often removed, as is the case with those relieving the parterre. There is a single one distinct in colour, which I think will become very useful that way; it is called *Elatior*, and is a very good blue; but I have not been able to increase it to be available for this purpose yet.

While speaking of this class of plants, I may mention that the most brilliant, inexpensive, and showy bed for early spring, is the common *Primrose*. I guess some of my readers think I am descending very low now, even to meanness. Well, be it so; but I shall not be easily convinced of my error, and few that have seen a bed so formed but have been converts to my opinion. Plants taken out of the coppice, hedge bank, or wood, as soon as they can be distinguished, which is not before the end of January (or February in ordinary seasons), planted tolerably thickly in a bed, present a mass of bloom which no other spring plant that I am acquainted with can equal—and that bloom, too, of a most showy colour. So partial am I to my primroses, that for several years I have had a good many beds emblazoned with this, the most lovely of all spring flowers. I am trying to obtain sufficient of the double of the same colour, but it does not equal the common for abundance of blossom.

I believe some people use the various kinds of *Violets* for spring beds, but the flowers, sweet and attractive though they be, are not conspicuous, and there can be no question but that they are much lessened in numbers by taking up and replanting in autumn, so that I would not advise their use, unless in special cases, where the particular favour in which they are held is deemed such as to overcome all other disadvantages they labour under.

When a bed or two of *Fuschias* forms part of the design of floral arrangement, which they often do, some means

must be taken to render them somewhat attractive in the spring months. Some that I have are planted in the interstices, between the fuschias, with bulbs, as *Hyacinth* and *Narcissus*, the latter of which does very well, but the former not so well; and the best of all for fuschia beds is the *Winter Aconite*, which, blooming long before anything else, makes it particularly cheerful and welcome; and so exceedingly hardy is this plant, that it is not only able to cope with the sturdy fuschia, but one bed that I have of the *Fuschia Globosa* is threatened to be overcome by it. It seeds freely, and when in flower the foliage is graceful.

Before I proceed farther, I may mention not having been successful with the *Hepatica*: although I have increased and grown it with avidity, I cannot get it to flower abundantly enough to satisfy me; and what flowers it produces do not throw themselves sufficiently above the leaves; I can only attribute it to a dislike it has to be removed so often. The best flowering plants that we see are such as have not been moved for years. Perhaps some of your readers may have been more fortunate with it, and if so, I should feel glad to have their method of managing it. S. N. V.

(To be continued.)

A FEW WORDS ON HATCHING AND REARING POULTRY.

IN submitting the following brief hints on hatching and rearing poultry, the writer has endeavoured, by adopting plain and simple terms, divested of all technicalities, to render himself perfectly intelligible to the merest novice in *poultry culture*. Having had many years experience in the above the information may be relied upon, and in the first place, I would recommend all parties desirous of procuring a superior breed of birds, at the least possible expense, to obtain two or three barn-door hens about to sit, then buy from some neighbour, having the desired breed, fresh laid eggs, allowing from eleven to thirteen to each hen, according to size; should more than thirteen eggs be placed under a hen, and the weather prove cold, the chances are that one-third of the clutch, at least, are spoiled.

If an out-house, or cellar, can be used for the nest-house, so much the better, provided the floor is slightly moist. In the darkest corner place a good handful of broken oat straw, and to better form a nest, and prevent the eggs rolling out when the hen moves, place a row of bricks all round. In such a place the chickens will *shell-out* strong and healthy. Many persons may wonder at my recommending a moist place, but let it be remembered if you leave a hen to herself, she will choose for the brooding place a spot under a bed of nettles, a gap in a hedge, inside a stack of faggots, or similar damp places; all being places nature has pointed out as the most suitable, and apparently for this reason. The germ of the egg floats uppermost within and against the shell, in order that it may meet the genial warmth of the breast of the fowl, we must, therefore, in hatching, apply most warmth to that part only; the egg being supplied with only a limited quantity of moisture, is thus arranged to prevent evaporation from a large surface, as the egg is only very warm at the part in contact with the fowl, until the blood-vessels searching nourishment for the embryo have surrounded the inner surface of the shell, when the whole egg becomes gradually warm, and eventually of an equal temperature. I will reserve the remainder for another early paper. W. J. M.

GLASS LABELS.

I WOULD propose tallies cut out of 16 or 21-ounce glass, the names put on with a writing diamond; they would be imperishable, and would cost little of time or money. Every gardener has, or ought to have, a proper diamond for cutting glass, for repairs; and a splinter writing diamond may be had for a trifle.—A. WILSON, Norton, Kent.

TO CORRESPONDENTS.

*** We request that no one will write to the departmental writers of THE COTTAGE GARDENER. It gives them unjustifiable trouble and expense. All communications should be addressed "To the Editor of The Cottage Gardener, 2, Amen Corner, Paternoster Row, London."

BRUGMANSIA SANGUINEA SHEDDING ITS BUDS (Amateur).—The young Brugmansias will not cast their buds under your present treatment of moderate moisture in a cool greenhouse, after they get another shift, which they must have shortly. Those that dropped were formed, though not visible, when the cuttings were made, and could not be expected to come to full maturity. Indulge the plants with a dose of weak liquid manure once a week through the summer, and you will see them in fine bloom soon.

LARKSPUR SEEDS (C. L.).—Very many thanks for your kind attention. If they are really the true blue we shall value them much.

COLOMBIA (T. H.).—Colombia and Columbia are two very different countries, thousands of miles apart. We had anticipated the error, and explained the whereabouts of the former. We would not at all advise the project. Even if you were "located" in South Carolina you would still be some thousands of miles from Columbia. It would be a good chance, however, to get to your friend in South Carolina; but, first of all, ascertain from him if he is able to engage you on your arrival. Then the cheapest way is to go in a sailing vessel to New York, and take land conveyance down to the Carolinas. No one need hesitate to write to us confidentially.

ISOTOMA AXILLARIS (A. L.).—This is a half-hardy annual, or, at all events, is best when treated as such. It is only six inches high, and the flowers are a greyish blue. The beginning of March is the best time to sow it—then it flowers from July till stopped by the frost; but if you sow it immediately, and push it on in heat till it is two or three inches high, and plant it out at the beginning of July, you will probably see what it is late in September.

GERANIUMS (Ibid.).—Yes, every one of them—fancy ones and all—will root in the open air if put in before Midsummer; *Queen Victoria*, *Prince of Orange*, and *Unique* cannot be struck otherwise during the summer, but not one out of a score of them will fail if put in immediately, either in the sun or in the shade; a west aspect, however, is the best for them thus early. *Calceolarias* struck under a frame in the autumn may be potted in October, or even in November; they will remove all the better in dull foggy weather.

CINERARIAS BLIND (Devon).—Allowing them to flag, would, no doubt, injure the bloom of your Cineraria, but not to that extent as to prevent them blooming. It is more likely to be caused by the bites of the green fly. Cut your *Pimelea* back to the height you wish, but give it no water till it shoots again. Keep it a few degrees warmer till that takes place; then pot, and water, and give air as usual. Put in the cuttings for fear it may not grow again, which is just possible. The reason why no water should be given, is because the plant will have lost all its foliage, and therefore requires to be kept quite dry.

ROBBER BEES (A. B., East Lothian).—These differ not from other bees; they come indiscriminately from any hive, and attack only weak stocks; the best protection you can give is to narrow the entrance of the hive attacked, so that but one bee, or two at most, can pass at a time.

DIELYTRA SPECTABILIS (J. W. J.).—It will strike from cuttings of the young tops; and the roots may be divided in the spring like those of a dahlia; if you seed it, sow the seeds as soon as they are ripe in any light earth, and in a close frame till they are up, then cooler: it is indeed a charming plant. *Camellias* and *Azaleas* ought to set their buds perfectly in the conservatory you describe; but *Crassulas* will not do in it at all, but you have completely spoilt your *Crassulas* for this season. Where did you learn to keep them so hot? A cold frame, with the lights off from ten to four, would have been a far better place for them. Anything above the freezing point would be better than your plan; they ought to be in bloom just after Midsummer. Your taking off side-growths will do them neither good nor harm now; we would rub them off, and make cuttings in August of all the tops which did not bloom.

MAKING BARLEY SUGAR (W. T.).—Try again, and put a teaspoonful of vinegar to a pound of sugar. We have always succeeded well in following the directions given in THE COTTAGE GARDENER. Perhaps there is something in the sugar you use; patent sugar will very readily crystallize, which many a good housewife finds to her cost when making her preserves.

AZALEA-BED (A Subscriber).—The best low annuals to enliven a bed of common Azaleas, are the blue *Nemophila*, *Viscaria oculata*, *Sphenogyne speciosa*, *Calendula hybrida*, *Eucardium grandiflorum*, *Saponaria calabrica*, and all the little blue and white *Lobelias*, together with *Lobelia racemosa*, all of which will bloom in a peat bed, as well as in any other, perhaps better, and all of which may be sown now, and will be in bloom before the end of July. The *Viscaria*, *Saponaria*, and *Lobelia ramosa*, keep longest in bloom.

BEES (Juvenis).—The old-fashioned steelyards for weighing hives are as convenient as anything, and may always be obtained for a trifle. An answer about aged queens will be in the next Apiarian's Calendar. Do not attempt to kill the queen; leave that to the bees, they will manage that matter better than you can.

BARK-BED (J. N., Omagh).—Your bark-bed, three feet square, is too small to heat well. You might try a foot or more of fresh made stable-dung at the bottom, to set it into a state of fermentation, and then it would remain in heat for some time. Water from the plants plunged in it would be more likely to cause heat than to cool the bed. Your bark may be too old, perhaps, to heat. Obtain it fresh from the tanner, and make it firm, by gently beating it with a three-pronged fork as it is put in.

WARDIAN CASE (Q. P.).—Can any of our readers say where, in London, he can purchase an ornamental Wardian case for ferns? *Rhododendrons* are best planted in the autumn.

ROOM PLANTS (Ibid.).—Fancy *Geraniums* are very suitable for flowering in a room in summer; so are young *Oleanders*, if kept in saucers of water, or plunged in damp moss; also the dwarf *Gardenia*, called

Cape Jasmine, one of the best summer room plants we have, and the sweetest. All the *Gloxinias* and all the dwarf *Achimenes* we use in the rooms the whole summer. *Crassula* or *Rocrea falcata* lasts a long time that way; and the Madagascar Periwinkles (*Vinca rosea* and *alba*) are well suited for rooms in the autumn.

AMMONIA WATER (Bleythin).—We have repeatedly said that there is no rule whatever for testing the strength of any kind of ammonia water. Take Mr. Beaton's practical test, which is the safest of all.

MONARDA AMPLEXICAULE (A Constant Reader).—We have made considerable inquiries about this, and cannot hear of any party that knows of its whereabouts. You may obtain a list of Herbaceous plants by applying to Mr. Appleby, by post-paid letter, with a post-office stamp inserted, directed to him at Pine Apple Place, Edgeware-road.

FROGMORE GARDENS (G. A. G.).—We believe that any respectable person is admitted to see these on presenting his card. If there are any rules to be conformed to before such admission can be obtained we shall be obliged to any one who will inform us.

UNGLAZED PORCELAIN LABELS (Sabrina).—If you wish to write on these indelibly, do so with a pencil made of common plumber's lead; but we prefer the German cedar pencil, marked B, the writing from which lasts for a long time, and can be renewed or washed off whenever we wish to inscribe another name. Answers to other queries next week.

HAYTHORN'S HEXAGON GARDEN NET (Samuel).—Since you wrote to us we have had an opportunity of seeing this, and can recommend it for all garden purposes where the protection of a light net is required. If you write to Mr. Haythorn, Clinton-street, Nottingham, we have no doubt he will send you a sample, and his list of prices.

GREEN FLY ON ROSES (M. L. M.).—The most effectual plan of killing this pest is to cover the rose-tree with a sheet, and to fill the tent thus formed with a volume of tobacco-smoke by the aid of Brown's Fumigator. Let the tree remain enveloped in the smoke for an hour or two, and then syringe it; repeat this two or three times, if you see the green fly appear.

LIQUID-MANURE (Northampton).—You may apply the drainage from your stable and piggery either to your roses, or to your grass, or to the green crops in your garden; but how can we advise a preference for either, without knowing which most needs manuring? In any case a liquid so rich in ammonia should have four times its bulk of water added to it before using. Lice on pigs may be destroyed by rubbing them over plentifully and thoroughly with sweet oil.

PANSY (Cantiensis).—Your pansy—colour, purplish crimson, with yellow eye, and lower petals lightly edged with yellow—has a good form, but rather crumpled. We consider it a second-rate flower.

WATERING STRAWBERRIES (A. Y. Z.).—You will benefit them by so doing provided you keep them well supplied in dry weather until they begin to ripen. Liquid manure, as we advised another correspondent, is good for them. The rain-water will do well for your purpose.

GUTTA PERCHA WARDIAN CASES.—A correspondent (*A Reader*) writes to us thus:—"I know not whether any of your correspondents have used gutta percha for these cases. I have made some small boxes in which I have planted some Mosses. The boxes are very easily made with a flat piece of gutta percha and piece of band. I use a common heating, or 'flat-iron,' which is moderately heated, so that the gutta percha may be made sticky. I then put the two softened parts together, and they immediately adhere. Should there be a small hole it may easily be stopped by putting a thin shaving of gutta percha on it, and placing the warm iron upon it. To give a little finish to the cases, and to make them more pleasing to the eye, I use a little varnish made by dissolving some sealing-wax in spirits of wine. No zinc is required for the boxes above described."—There are no Palms small enough for such cases; *Fuchsias* and *Geraniums* do not do well in them.

COTTAGE GARDENER'S DICTIONARY (E. Hall).—The very title explains that it is intended only to give such species as are desirable for cultivation by gardeners. If you wish for a good work on British plants buy Smith's *English Flora*.

APPLES AND PEARS NOT BLOOMING (G. B.).—How can we possibly know instinctively the cause of this without knowing their state of health, or whether they bore a large crop last year?

COMMON SALT (J. C. L.).—This may be sown over the flower beds in winter, or very early spring, at the rate of about ten bushels to the acre. Generally speaking, it is not good for flowers. Remember, every leaf it rests upon it kills.

AURICULAS (C. S.).—Pressed flat as these were, no one can give an opinion on their merits. See what we say to-day about sending flowers to be criticized.

GUANO (A Young Rearer).—This will do for general gardening purposes, but is so strongly impregnated with ammonia, that it requires to be used with great caution, and in small quantities. It is useless to attempt to rear your orange-tree without a hothouse.

CHARCOAL BURNING (W. Lesnam).—This cannot be conducted advantageously except on a large scale. A heap of wood is covered over with turves and sand so as to admit air sufficiently to carry on a slow imperfect combustion, or burning. The heap is fired at several holes left near the bottom, and a draught at first is obtained by leaving a hole at the top; when the heap is well ignited, all the holes are stopped up.

NAMES OF PLANTS (X. Y. Z.).—Your moss is *Lycopodium helveticum*, or Swiss Club-moss. It will live out of doors, but better in a cool situation under glass. (*A Subscriber from the commencement*).—Your yellow flower is *Trollius Europæus*, or European Globe flower; and the pale purple flower is *Anemone pulsatilla*, or Pasque flower. Both are desirable hardy flowers.

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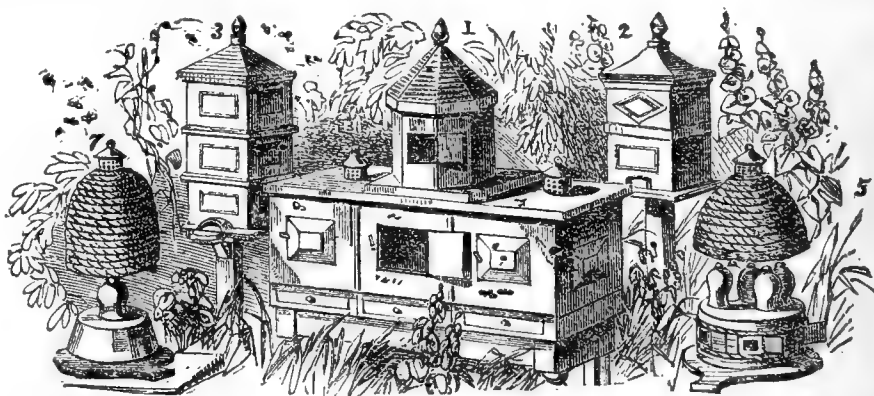
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WEEKLY CALENDAR.

M	D	W	D	MAY 29—JUNE 4, 1851.	WEATHER NEAR LONDON IN 1850.				Sun	Sun	Moon	Moon's	Clock	Day of
					Barometer.	Thermo.	Wind.	Rain in In.						
29	Th			Asc. HOLY TH. K. CHA. II. REST. 1660.	30.208—30.165	75—46	W.	—	53 a. 3	1 a. 8	3 37	28	3 59	149
30	F			Raspberry flowers.	30.183—30.076	77—53	S.W.	—	52	2	sets.		3 51	150
31	S			Figwort flowers.	29.990—29.970	79—45	S.W.	—	52	3	8 a 41	1	4 43	151
1	SUN			SUNDAY AFTER ASCENSION.	30.088—30.040	78—48	S.W.	—	51	4	9 a 15	2	2 34	152
2	M			Rose-Chaffer seen.	30.162—30.076	75—47	W.	—	50	5	10 41	3	2 25	153
3	Tu			Argus Butterfly seen.	30.222—30.117	75—51	E.	—	49	6	11 30	4	2 16	154
4	W			Bee Orchis flowers.	30.101—29.939	81—57	W.	—	49	7	morn.	5	2 6	155

THAT the Publisher's Catalogue is a faithful guide to direct us to the prevailing taste for literature, is easily demonstrable by a few facts. Who ever sees a Poem now-a-days in that Catalogue? and is not the reason palpable—that people have become less fond of the pleasures of the imagination? There is no doubt about it. We have become more practical—more anxious to ask the “why and the wherefore,” and to find the “because” of all that is going on around us, and within us, in every day life. Hence, Travels, Biographies, Science made popular, the arts of life, and the lore which maketh wise for eternity, fill the volumes which now crowd from the press. This demonstrates the prevailing taste, and if we look back into the earliest age of our printed literature, and find even there a book occasionally dropping forth in the panoply of its black-lettered type, and rudely illuminated initial letters, we may accept it as a sure proof that there were readers for such a work, for the Pynsents, and Berthelets, and Wynkyn de Wodes of those times, were as shrewd as the Murrys, Longmans, Knights, and Orrs of modern days, in detecting “whither blows the favouring gale.” Now, the very first work on the cultivation of the soil, published in English, that we ever saw, is entitled “The Book of Husbandry, very profitable and necessary for all persons,” and the date was 1532, or 1534, we do not remember which. We have not that volume now to refer to, but we have open before us another edition, with this title page:

The Four Books of Husbandry of Fitzherbert.
By John Roberts. London. 1598.

“Better is he that laboureth and aboundeth in all things, than he that boasteth himself and wanteth bread.”—*Ecclesiasticus* x. 27.

Now, if any pilgrim loves, as we do, to visit the quiet nooks of our land, where rest the ashes of those who have done good service in those fields unstained except by ink, let him take up his staff, and journey down to Norbury, in Derbyshire. In the nave of its church rests the writer of that book; a book, as Fuller prophesied, that would endure when the author's blue gravestone ceased to recall his memory. On that marble slab, engraved on brass plates, are the full-length effigies of SIR ANTHONY FITZHERBERT, and his lady. The robe around him, and the paper roll he grasps, tell of his judicial station and literary toils, but the inscription is nearly effaced, and only now lives entire in this record of the Heralds.

“Of your charitie praye for the souls of Sir Anthony Fitzherbert, knyght, one of the King's Justices of his Common Bench, and sometime Lord and Patron of this towne, and Dorothy, his wife, daughter of Sir Henry Willoughby, knyght, &c. Which Anthony deceased 27 May, 1538.”

Sir Anthony is believed to have descended from that family of Herberts, which, ennobled in many of its branches, included among its coronets those of Pembroke and Huntingdon; but if the blood of the Herberts did not flow in his veins, still he was of gentle lineage, and the Fitzherberts had been Lords of Norbury ever since the year 1125, and he was born there, in the family mansion, during the reign of Henry the 7th. Like other younger sons in those days of entailed broad acres, and small incomes in broad gold pieces, he was designed to be the maker of his own fortunes by brain labour. The law was assigned to him as his profession, and he grappled with it as one resolved to subdue it to his purpose. In 1511, he was admitted to the dignity of a Serjeant; in 1516 he was knighted; in the year following he became the King's Serjeant; and in 1519, he published his *Grand Abridgement* of the law, which needs no other praise than that it is highly commended by the greatest of legal authorities, Sir Edward Coke. Nor was this his only professional publication, for long after he had become a Judge of the Common Pleas, in 1523, and long after he had become possessor of the Norbury estates, on the death of his elder brother, he continued to prepare those legal collections of authorities, such as the *Natura Brevium*, &c., works which have had for their commentators, Sir Matthew Hale, and other more modern legal luminaries. He became a judge whilst Wolsey presided over the Chancery, and endeavoured to elevate his own court by the depression of those of the Common law. Shelton, his contemporary satirist, says—

Judges of the king's laws,
He counts them fools and daws—
That all our learned men
Dare not set their pen
To plead a true trial
Within Westminster Hall.

But it is told to the honour of Sir Anthony, that superior to the Cardinal Chancellor in every mental gift, and sustained by his wealth and high connections, he unflinchingly opposed the attempted encroachments, and he lived to see the presumptuous priest hurled from his pride of place, surviving his overthrow eight years. Yet, Sir Anthony had a deep conviction of the rights of the national church, and, however he might condemn its errors, would in no way consent to the spoliation which had begun as he lingered on his death bed. At that solemn time he called his children around him, and exacted from each a promise that they would

in no way participate in that spoliation,—a promise which they rigidly fulfilled.

His *Book of Husbandry*, we have seen, was published about six years before his death, and of it he says:—“I will not absolutely say it is the best way, and will serve best in all places, but I say it is the best way that ever I could prove by experience, the which have been an householder this forty years and more.” And during that householding time, he addressed himself to the fulfilment of its duties with the same energy, and the same systematic effort to master its details, as had characterized him in the pursuit of the less alluring study of the law. He was no procrastinator—no truster to uncertain memory—but what he did he did sedulously, and what he resolved to have done, at the very moment of the resolve was jotted down in his tablets. “I will desire the thrift-expecting man to rise early in the morning, according to the old saying—To rise early maketh a man holy, healthy, and wealthy,” to go over his farm “and principally about the hedges,” and to have a pair of tablets on which to note what requires attention. “This I used to do ten or twelve years and more, and this let him that is enamoured of thrift, use daily to woo her withal. And if the thrift-coveting person cannot write, then let him nick the defaults upon a stick, and shew them (tell them) to his Bailiff!” So anxious was he that forgetfulness should have no excuse, that he gives what he terms—“An excellent rude lesson in rude rhyme for a underserving man to say every time when he taketh horse, for his remembrance, not to forget any implement behind him.

“Purse, dagger, cloak, nightcap, kercheffe, shoeing horn, budget, and shoone (shoes),
Spear, mail, hood, halter, saddle-cloth, spurs, hat, and thy horse-comb:
Bow, arrows, sword, buckler, horn, leash, gloves, string, and thy braser:
Pen, paper, ink, parchment, red wax, punisse and books do thou remember.
Pen-knife, comb, thimble, needle, thread and point, least that perchance thy girth break:
Bodkin, knife, rubber, give thy horse meat,
See he be shod well, make merry, sing if thou can,
And take heed to thy needments, that thou lose none.”

The spirit of his excellent little volume may be correctly estimated from this portion of its preface:—“Unto the season-observing husbandmen, the great eternal Maker of all what ere was made, both ordained and allotted two wives, the one of them for the comfort of his intellectual and divine part, the other for the nourishment and preserving of his mortal dust-metamorphosed body—To wit, *woman* the soul's joy, and *earth* the body's nurse.” “Since then thou art in such large chains bound unto the earth's bridal, close not the closets of thine eyes with sloth, keep measure, not extending to riot, and thy riches will increase, as numbers flow in the fire-inflamed brain of the divinest poet. The true handmaid of virtue is labour, and the only foe to them idleness.”

“There is a seed that is called discretion, if a husbandman have of that seed, and mingle it amongst his other corn, they will grow doubtless much the better, for that seed will tell him how many casts of corn every land ought to have.” In the practical portion amid much that is good, there is also not a little that is error; thus, speaking of *bees*, he says:—“There is a bee called a drone, and she is greater than another bee, and will eat the honey, and gather nothing, and therefore they would be killed; and it is a saying that she hath lost her sting, and therefore she will not labour as the others do.” In the practices of *gardening*, he chiefly touches upon crown and whip *grafting* and *budding*, which he calls “grafting by leaf,” but he says he could write much more on gardening, its profits and pleasures, solely referring, however, to kitchen-gardening. “But,” he adds, “I refer the reader to any of the many books of gardening which will shew him enough for that purpose.” Now, if any such existed, they have been devoured by time, for no such works are known to us, except the comparatively useless ones that have descended to us from the Romans. In Poultry-keeping, in the assignment of their respective duties to the various servants of the household, and in his particulars of the “Wife's Housewifery,” he is very comprehensive, and at this distance, as amusing as comprehensive, because unfolding to us the domestic economy of the olden time. Nor can we fail to observe that Tusser, who had reached manhood when the *Book of Husbandry* was published, is indebted to it for many of his “Five hundred points.”

We have before us another of Sir Anthony's books, entitled *Surveyinge. Anno Domini 1567*. But it relates chiefly to the rights of tenancy, and forms of delivering possession, although there are some chapters shewing “How a man should butte and bounde the land,” and “How to amende medowes, &c.”

METEOROLOGY OF THE WEEK.—At Chiswick from observations during the last twenty-four years, the average highest and lowest temperature of these days are 69.8°, and 46.6°, respectively. The greatest heat observed during the time was 90°, and the lowest cold 35°; 107 days were fine, and on 61 rain fell.

It is very remarkable, that although honey and the honey-comb are so frequently mentioned in the Scriptures, but very few allusions are made to the bees. It might be reasonably expected that they would have furnished frequently similies to the figurative pen of the prophets, and that as knowledge is likened unto their produce for its sweetness (*Prov.* xxiv. 14), and as Solomon holds up the ant as an example of industry, so we are justified in expecting that the bee should have been quoted as a model of providence, family concord and loyalty. But it is not so, and we have no allusion but to their irritability (*Deut.* i. 44), and to their habit, when wild, of inhabiting the rocks and the trees. (*Deut.* xxxii. 13. *Sam.* xiv. 26.) Yet it was not because their produce was small or undervalued, for it is always included among the best produce of Judah (*Gen.* xliii. 11. &c.); a fertile land is described as one flowing with honey (*Deut.* viii. 8. &c.); and it formed an article of commerce with neighbouring nations (*Ezek.* xxvii. 17). The conclusion seems to be that domesticated bees and their habits were not known to the Israelites, and it would be difficult now to point out the nation to whom we are indebted, for adding this most profitable and most interesting insect to our catalogue of gardening and agricultural stock. That it does rank so highly, and deserves to be so estimated more frequently, admits of no doubt, for we know of many cottagers and allotment tenants who on an average of years pay their entire rent from the produce of their hives.

That from the earliest times, bees have been esteemed in England for the value, as well as excellence of their produce, is quite certain, for in our earliest records we have them mentioned as property; and among our first printed books, is Thomas Hill's, "A profitable instruction of the perfite ordering of Bees." This appeared in 1579, and from that time until the publishing, in the present year, of *The English Bee-Keeper*, the volumes which have appeared in succession from the pens of Swammerdam, Reaumur, Bonnet, Schirach, Thorley, Hunter, Huber, Bevan, Huish, Payne, Miner, Taylor, and others, have been marked by the gradual increase of sound information—sound, because confined, for the most part, to the results of the writers own experience.

The latest work in the above list, and one of the best, is *THE ENGLISH BEE-KEEPER, or, Suggestions for the Practical Management of Amateur and Cottage Apiaries*. Its author is "A Country Curate," so favourably known to our readers as the writer of "The History of an Apiary," and other practical, instructive, and amusing papers in our columns. The object of this little volume is thus told—

"I wish to induce all residents in the country, who have leisure and opportunity, to encourage bee-keeping among their poorer neighbours; and not with a view to their *pecuniary* advantage *only*, for the study of bees is capable of ministering to a much higher end. There is scarcely a more interesting branch of natural history to be mentioned, and none certainly more instructive. To quote the words of Dr. Bevan—"In common with the other branches of natural history, it leads to a salutary exercise of the mental faculties; it induces a habit of observation and reflection; no pleasure

is more easily attainable, nor less alloyed by any debasing mixture; it tends to enlarge and harmonize the mind, and to elevate it to worthy conceptions of nature and its Author." Every word of this is true. The rustic bee-keeper, if he have only a soul to appreciate the works of God, and an intelligence of an inquisitive order—and intelligence is sure to expand with the attentive study of any branch of natural history—cannot fail to become deeply interested in observing the wonderful instincts (instincts akin to reason) of these admirable creatures; at the same time that he will learn many lessons of practical wisdom from their example. Having acquired a knowledge of their habits, not a bee will buzz in his ear without recalling to him some of these lessons, and helping to make him a wiser and a better man. It is certain that in all my experience I never yet met with a keeper of bees who was not a respectable, well-conducted member of society, and a moral, if not a religious man. It is evident, on reflection, that this pursuit, if well attended to, must occupy some considerable share of a man's time and thoughts. He must be often about his bees, which will help to counteract the baneful allurements of the village "public," with all its accompanying syren-like evils. *Whoever is fond of his bees is fond of his home*: this is an axiom of irrefragable truth; and it is an axiom that will be sure to kindle in every true Englishman's breast a favourable regard for a pursuit, which, though humble, has undoubted power to produce so happy an influence."

Such are the author's objects, and we assure our readers that he has written most successfully for attaining those objects. It is a thoroughly practical work, yet enlightened by a sufficient application of scientific knowledge. It teaches where and how to found an apiary; how to select stocks; what hives to prefer for cottage management, for which he justly decides upon Mr. Payne's; amateur hives of straw and wood; their management in the open air, in a bee-house, and in a room window; on feeding bees, and on the instruments and conveniences desirable to the bee-keeper.

It is not to be expected that we could agree with the author in all his results, for even in practice the same experiment will have various degrees of success in the hands of as many experimenters; and we especially differ from him where he objects to feeding bees with barley-sugar, because it is "troublesome to make." Now, we have found it but little more troublesome to manufacture than to prepare a compound somewhat similar to that which he recommends, of sugar, sherry, honey, and beer; and this compound, to defeat him with another of his own objections to barley-sugar, is "as expensive as honey." Supposing, however, it to be thus dear, and even troublesome to make, yet these drawbacks would be all more than compensated by the facility to feeding which it affords.

We have many passages of new and useful information marked for quotation from this truly useful volume; but we must forbear, and the less reluctantly because we feel assured that many of our readers will adopt our recommendation of adding this good guide in bee-keeping to the other friends-in-time-of-need on their book-shelf.

GARDENING GOSSIP.

THE great talk among florists is of the absence of the usual great show of *Pelargoniums* at the Chiswick Show, which was supposed to be the result of previous concert among the growers; but we made it our business to go

among the growers, and we can state positively that their specimens were certainly not ready to make any kind of creditable appearance. Had they been as forward on the third as they were on the fourteenth, when they were not even then fully blown, they would have been at Chiswick.

We are quite aware that some endeavoured to have it inferred they were absent because the prizes were not so good as they wished, in the hope of moving the executive to more liberal encouragement; but the truth is, their plants were not fit to be seen.

People are now as much opposed to any removal of *The Crystal Palace*, when done with, as they were at one time to its erection in the park, and schemers are at work already for suggestions as to its future appropriation. We have never had more than one opinion—It originated with a gardener, and it should be made a garden; not of a costly description, because that is unnecessary, but it should be laid out in walks, clumps of shrubs and trees, and beds of flowers. It should be a promenade for winter, and should be open to all classes freely as the open park. Hundreds of interesting plants would thrive under glass without artificial heat, which would involve, perhaps, more cost than it is desirable to incur. And what if it cost the country a few thousands a year for labour? The money would not go out of the kingdom, and it would be employment for so many more labourers in the English vineyard. Specimens of very choice plants would thrive there, and half-hardy plants would flourish there. But suppose it were even necessary to give artificial heat, who would begrudge the cost when it was to provide amusement for the million? And who has a greater right to be considered than the million?

Mr. Hume, who has laboured often in behalf of amusement for the people, would be delighted at the appropriation of a reasonable sum to provide so rational a means of giving enjoyment to the poor as well as the rich. The parks have always been a stain upon the English taste; it is time that they were examples of English landscape gardening instead of what they have been, and still are—beautiful plots of ground, ill planted, and ill kept. We hope the gardeners will speak out; we hope the mind that planned the palace will be directed to its appropriation as a winter garden.

A discussion has arisen among the learned cultivators of *Pinks* and *Carnations* upon the fact that in "The Properties of Flowers and Plants;" it is said there should be six guard petals, whereas the knowing ones say it is unnatural, and against the nature of the flower, which has only five. Upon this question we need only quote the actions of the learned disputants, for whenever they can find a sixth petal large enough to drag down into the lower circle, they do so; and why? because six petals make a better approach to a circle than five do. They thus stultify their own argument, and supply from the other petals what should be produced by the flower itself.

We all know the *Polyanthus* has five divisions on the petal naturally, but that it does come with six, and when so, the flower is greatly superior to the flower with only five, because it approaches the scalloped circle closer. It is not pretended in the "Properties of Flowers" that the models laid down should be natural; it is the very essence of floriculture to produce things far removed from their natural state, and,

in many cases, the best flowers are the furthest removed from their original form and texture.

The *Highbury and North London Horticultural Show* took place on the 15th, in the grounds behind the Crescent, and a more complete exhibition was never witnessed. An immense tent, of elegant proportions, was furnished with a centre and two side tables, the full length, on which some of the finest specimens that have been shown this season were placed. The grass was matted, so that it was like walking in a drawing room.

The plants were quite worthy of the preparation for them. Mr. Cole, gardener to Mr. Collyer, of Dartford, especially distinguished himself, for better grown plants were never shown. Mr. Frazer also contributed largely. The amateurs of the neighbourhood evinced taste and skill. Mr. Bragg, of Slough, showed the best *Pansies* we have seen this season; large, well-grown, and well-chosen. The only seedling we observed worth notice was a *Cineraria*, a purple self, not an enticing colour, slightly cupped, and, therefore, the petals more closed than they would be if they came flat; it had a first seedling prize, but hundreds as good have been passed over this season. It was raised by Mr. Lockner, an amateur, self-sown in one of the named pots. The *Roses in pots* were grand. Messrs. Paul, of Cheshunt, exhibited a collection—perfect models; Mr. Francis, of Hertford, showed some not for competition. A variety of cucumber called *Huntley's improved* was exhibited in great style; one on the plant in a pot, others cut. One must have been thirty inches long we think, and for such large fruit handsome. Upon the whole this exhibition was so complete that it was Chiswick in miniature.

The *Royal Botanical Society's Show*, in Regent's Park, on the 14th, was attended by, according to their own estimate, five thousand persons. It was, in the distinguishing features, much the same as that at Chiswick; the plants, however, in many respects, were better flowered, being ten days forwarder.

In the seedling way there was not much that we had not already seen. Hoyle's *Magnet*, Pelargonium, of which we have already favourably spoken, confirms our former opinion. It will be a very useful flower in collection on account of its novel colour.

At the *Shacklewell Dahlia Show* no less than twelve prizes are to be given for new flowers; no bad speculation for dealers who subscribe a pound each; and if they can only induce people to order two of their flowers, out of forty-five which are eligible to be shown, it will answer their purpose. The objection made in floral circles is, that the party who has half-a-score new flowers eligible pays no more than the man who has but one. It is, however, the only way to force new flowers upon the world, and will be adopted on a larger scale. Of the forty-five new flowers let out by the subscribers there are few so good as those we already possess.

There is a talk at some of the floral societies of striking at the root of that evil which every florist feels, the sale of worthless novelties, by excluding new flowers from stands, and only allowing them to be shown in class by themselves. It would improve the quality of the stands, and retain many flowers which are too often thrown aside for worse novelties. What new Dahlia will beat *The Marchioness of Cornwallis*, *Princess Radzeville*, *Duke of Wellington*, *Sir F. Bathurst*, *Standard of Perfection*, *Scarlet Gem*, *Yellow Standard*, *Queen of the East*, and such like? Constancy of bloom carries everything, because a flower can always be cut, but we gain nothing in quality. *Sir F. Bathurst*, of last year, was the only real advance; others there were which came up tolerably well, but nothing like a model of our best present ones.

This year, when half a dozen are mentioned for some distinct point in their favour, we hardly know a flower that can be shown without an hour or two can be occupied in poking open their quilly petals, for *dressing* is now arrived to such a discreditable pitch, that gentlemen who cannot, or will not, condescend to disguise a flower, stand no chance in competition.

E. Y.

NEW PLANTS.

THEIR PORTRAITS AND BIOGRAPHIES.



OPPOSITE-LEAVED SCHŒNIA (*Schœnia oppositifolia*).—*Botanical Magazine*, t. 4560.—This is a new genus of *Compositæ*, named in honour of Dr. Schœn, a botanical artist. It has the character termed by gardeners *ever-lasting* in the flowers, which in *Schœnia oppositifolia* are rose-coloured. Among *Compositæ* it is nearest related to *Helichrysum*: the accompanying woodcut will sufficiently explain the second or specific name. It was discovered in Western Australia by Mr. Drummond, by whom seeds of it were transmitted to the Kew Gardens, where it flowered for the first time in the April of 1846.

It is an upright-growing annual, a gem of its kind, and may be compared with such things as *Mesembryanthemum tricolor* of the gardens, *Portulaccas*, *Mangles's Rhodanth*, with which, and with *Lawrencella rosea*, Sir W. Hooker compares it, and quite equal it is to either of them for interest and beauty. The rosy hue of the flower envelopes is what gives the real charm to this little greenhouse or half-hardy annual, the flowers being collected together in heads or corymbs on the top of the stalk, and densely guarded by these coloured scale-like coverings. To cultivate this successfully, the seeds should be sown in a hotbed in the spring, using one half peat earth, and the other half made up of leaf-mould, loam, and sand. As soon as the little seedlings appear, the pots are to be removed to a front shelf in the greenhouse, where a free current of air will be secured, so as not to force them into premature flowering condition. As soon as the seedlings are strong enough to bear transplanting, four or five of them should be at once

transferred into the pots in which they are to produce their flowers; after this potting they ought to be put into a close frame for a week or ten days, to enable them the more readily to make fresh roots. After that, the greenhouse or a good window-sill would be the best situation for them; they do not require much water at any time, but still the pots should not be allowed to get dry, as they, and indeed most of the pot annuals, do not flower well if they suffer from any sudden check while they are growing.

Stem erect, angled, downy, unbranched, except by flowers at the top. *Leaves* opposite, united at the base, narrow spear-head shaped, slightly downy and hair-fringed, gradually diminishing into bractes. *Flowers* in a corymb; flower-stalks with bractes; involucre scaly, and the innermost row of scales are like the ray petals of the daisy, &c., owing to their having rose-coloured appendages; receptacle, or disk, full of yellow florets.



DARK-FLOWERED METRODOREA (*Metrodorea nigra*).—*Gardeners' Magazine of Botany*, vol. iii. 49.—This genus was named by Auguste Saint Hilaire in commemoration of *Metrodoro Sabino*, "who, according to Pliny, was the first to illustrate plants by means of figures, and the specific name alludes to the dark purple colour of the flowers." It belongs to a section of the *Rueworts* (*Rutaceæ*) peculiar to the equinoctial regions of America, and called *Pilocarps*, from *Pilocarpus*, another genus of the order. It is also closely related to *Esenbeckia*, one of the Quinas of Brazil, which, in those regions, is in as high public estimation for its febrifugal properties as the Cinchona, or Peruvian Bark itself. The great bulk of the *Rueworts* inhabit our Cape Colony in the shape of *Diosmas*, and the like; or the open plains and hill sides in New Holland, as *Eriostemons*, *Boronias*, *Correas*, and others, which with us require only the shelter of the greenhouse. The Brazilian *Rueworts*, like this *Metrodorea*, on the contrary, must have the stimulus of a hot damp stove in their growing season.

Metrodorea nigra is a strong-growing, woody, or shrubby plant, attaining the size of a large currant-bush, and producing its numerous small dark purple flowers on loose panicles from the end of the branches, eight or nine inches long—a mode of flowering very well represented by our artist in the accompanying woodcut. Although this plant makes a showy appearance when it is in full flower, it is rather bulky to stand by the side of such stove plants as

the amateur with short means delights to cultivate. It must be well accommodated at the roots; a large pot and a strong compost of loam and leaf-mould, with, or without, a little peat. It requires abundance of water in summer, as, like the Oleander, its roots are periodically immersed in water from the overflowing of the rivers. It was discovered in the bottom of a brook running into the canal of Sebastopolis, in the province of Rio, and was first introduced here from Russia by the Horticultural Society in 1846, who presented a plant of it to the Society of Apothecaries, in whose garden it flowered last year, and where, in days gone by, it would have been thought of much value medicinally, Rueworts like it being characterized by their powerful bitterness, and the American species being well known for their febrifugal properties, as we have just stated.

Metrodorea nigra has leaves about four inches long, dark green, smooth, in threes, each leaflet broadly spear-head. Flowers in loose panicles about eight inches in length, clammy and downy at the end; each corolla about three lines in diameter; petals five, broadly spear-head, very glossy, and dark purple; filaments purple; anthers orange. It is a straggling shrub, and the bark of the branches grey.

J. B.

THE FRUIT-GARDEN.

MELONS.—We must return to this subject, as the present is a period of much importance to the main summer crops. Those who intend ridging out late or autumn crops shortly, will do well, if in beds of fermenting material, to raise the frame nearly three feet above the ground level, with brushwood, sticks, &c. One of the chief elements of success with *very late* melons, is to be found in the ability to apply hot linings with a liberal hand in the end of September, and all through October; and this in order that a free ventilation may be observed, for confined dampness is, at that period especially, the great enemy. We would use the Beechwood, or Snow's or Terry's Melon, for the latest crop; what the new "Bromham Hall" is, we do not know except by hearsay.

"SETTING" MELONS.—This process should be attended to daily about noon, or when the farina is in a lively state and dry. As soon as the fruits swell as large as a pigeon's egg, they must be thinned out, and whatever number of plants a frame may contain, four or five melons to each light is a good crop, if size and flavour are a consideration. As soon as any given shoot has its allowance of fruit in this stage, the point should be pricked off at about three eyes beyond the fruit; so say our principal melon growers, although it is not unlikely that another eye or two would benefit them rather than otherwise. Still the advice is sound on the whole, for a greater latitude would induce young beginners to crowd their frames with useless spray, than which nothing is more opposed to success in melon culture. Through all their culture, indeed, the utmost vigilance should be exercised in this respect, no spray should be suffered to continue long to shade the principal leaves, providing the latter are heathful; if not, they must be progressively removed to make way for later developments. A good melon frame, or pit, always exhibits an uniform surface of bold leaves, with little or no spray lying confusedly over their surface. It is a good plan to make a point of examining the frames twice every week, for stopping, thinning, and regulation purposes and this on set days, in order to avoid neglect. All superfluous blossoms should at such times be pricked away; every blossom, both male and female, not wanted, is just so much strength detracted from the plant.

Swelling melons, at this period, require much nourishment, in order to keep the older leaves in vigour, for those ought to be quite fresh when the fruit is ripening. So sure as the larger leaves are decaying at that period, so sure will the flavour be inferior and the flesh wanting

in depth and in juice. Now the leaves may decay through more than one reason; insects are the most general cause, but lack of sufficient nourishment is another. A high amount of elaboration, and a heavy tax on the secretions, exists during the months of June, July, and August; and if this is not supplied as demanded, a premature decay of the organs is a sure consequence. Need we add, to complete the climax, that the fruit suffers in a corresponding ratio. It is, therefore, good practice in frame culture, to raise all the frames in the end of May, by which period there is scarcely so much need of very hot linings; and so to raise them as that the roots may protrude into a bed of soil, or rather leaf-mould, outside the frame. To effect this the lining must be drawn away to the depth of the frame, a cavity formed, and the leaf-soil, or other material, introduced, closing the whole afterwards with sweet lining. If any renewed lining is requisite, it should be over this, and against the sides of the frame. Thus, beneath should be a mellow and moist lining of about 90°, enclosing material for the outstretching of the fibres; and above renewed lining, with a heat, *if necessary*, of 100°, for not more than 90° will descend to the soil from the tendency of heat to ascend. Let it be here understood, that it is too late to do all this when the melons have completed their first swelling; we have known this done, and the fruit to burst in consequence, as well they might. Their skins being "set" are ill-adapted to withstand an undue accession of sap, suddenly thrown into a system ill-prepared to receive and appropriate it. This procedure should take place about the period the crop first commences swelling off, and cannot well be done at a very early period, on account of the very hot linings requisite in frame culture.

WATERING MELONS.—This is rather an important affair, and must be done with caution. From the time they are ridged out, until the fruit is swelling, they require but little; what is necessary being conveyed to the root without wetting their stems, or damping the whole surface of the bed. As soon, however, as a crop is set and swelling, they need a very liberal watering; and this may be given all over the surface, taking care to use every means to get the surface dry again as soon as possible, by warm linings, and a free ventilation. Liquid manure will, at this period, prove highly beneficial, and it must be administered warm, say at 90°. After its application, the plants had best be sprinkled with clean water. Henceforth, they will scarcely need another soaking, unless the weather is very bright and hot, when the dose may be repeated just before the first swelling is completed; after, a slight amount of water will suffice; indeed, watering rather freely occasionally close to the frame inside, will almost prove sufficient, although slight syringings will be of great benefit each afternoon about four o'clock, or just before closing time, during bright weather. From the period the ripening commences syringings alone will be sufficient, and even these may be discontinued if the weather is dull, giving abundance of air night as well as day during the ripening period, in fact ripening them slowly rather than otherwise.

INSECTS.—The melon is peculiarly liable to the attacks of the thrip, the aphid, and the red spider. The last being most frequent, arises, doubtless, from the dry atmosphere which is encouraged amongst melons. Any stagnation of the sap, through impeded root-action, will tend immediately to subject them to its depredations. The best plan we know, is to use a sulphur paint, about once a fortnight, from the blossoming to the ripening period. This is composed of clay paint, to which plenty of sulphur is added, and may be thickly coated on the *shady* portion of the wood work, or wall, of the interior; and extended, but with caution, round the ends, with

now and then a daub on the sunny portions. In addition, if the insect appears, use syringing as frequently as it can be dried away again, taking care that the plants and surface are dry once every day. As for the thrips, they are always puzzling rogues; we are not aware that any sure mode of totally extirpating them exists, unless it be our friend Appleby's mode, as practised with orchideous plants, which is to fumigate with tobacco, and slightly stove with sulphur in combination. We have tried this with orchids for the extirpation of the minute thrip, which infests such as the *Dendrobiums*, *Notile*, and *Cœrulescens*, and it has certainly destroyed them. We venture on dangerous ground, nevertheless, to recommend such practice to the inexperienced, who, ten to one, will "burn their fingers" in the very first attempt. If stoving is resorted to, it will, perhaps, be a good plan, in a frame, to make three or four bricks pretty hot, and to plaster them with a sulphur paint, introducing them in front, and shutting close up with mats. We leave it, therefore, to the discretion of the operator, with a strong recommendation of caution.

The aphides are, as is well known, easily destroyed with the fumes of tobacco. We advise all our melon friends to practice fumigations in a *preventive* sense, commencing with the plant just before blooming, whether the aphides appear or not. Such may be repeated nearly once a fortnight, using moderate doses, but shutting up close with mats, &c., for several hours.

THE PERSIAN MELONS.—The Hoosianee, the Ispahan, and their varieties, with some others, require peculiar treatment. Mr. Fleming, of Trentham, is well known to be one of the most successful cultivators of this section in the varieties; and it is not the only thing he excels in. He has raised hybrids of his own, which are said to combine the hardiness of the finer old kinds, with the delicate flavour, thin rind, and exquisitely juicy character of the Persians. All, however, are too tender for those of limited means to rely on; and if they will try them, extra attention will be requisite. The best of glass is necessary, and a very high temperature must be secured. They, moreover, evince more impatience as to confined atmospheric moisture than the ordinary melons, albeit they enjoy a considerable amount of moisture at the extremities of the roots. Those who desire further information concerning them, with a view to next year's culture, will do well to consult the *Cottage Gardeners' Dictionary* when it arrives at the letter M. If we mistake not, this cheap work will prove the handbook of thousands. R. ERRINGTON.

THE FLOWER-GARDEN.

PLANTING TREES AND SHRUBS OUT FROM POTS.—There are two reasons in favour of the plan of planting single choice specimens out from pots on mounds twenty inches or two feet above the general level, a system of which I disapproved in my last; the first of which is a damp, cold bottom of clay lying in such a way as to be difficult to drain it properly; and the second is—a very general practice with planters—to make large wide holes at once, and filling them with fresh soil, or compost, in a very loose state, without pressing it down, an excellent plan for very hardy trees like our oaks; but the very reverse for any plant that is at all tender, or for one whose natural habit is to begin to grow with us early in spring, as some of the Indian firs do, or whose habit is to go on growing late in the autumn, as many of the Cypress tribe exhibit, and the reason is this: On a mound of loose soil you encourage the roots to go at once to the bottom. Right enough for the oak; but for the early riser in the spring you aggravate the evil of shooting too soon for our climate by encouraging the roots away from the influence of surface temperature.

At the end of a long winter our soil is never so cold at two feet from the surface as it is on the top, so that the deeper you have the roots, if the bottom is dry, the warmer they are, and, therefore, the more readily do they assist your plant to grow away at the top, and the sooner it does that, the more liable it must be to be injured by a late frost. The same causes are at work late in the autumn, to encourage the late-growing kinds to go on in their own way until they are overtaken by a sudden hard frost, which, perchance, may cut off their aspiring leaders. In November we may have the surface so chilled down as to stop vegetation; but at two feet below, the influence of the warm summer showers is still in operation, as I have just remarked. Therefore, those who have studied all this properly, object to the practice of encouraging the roots to sink deep into the earth. When they put in the new soil in a pit, they press it hard down until they come within a foot or so of the surface; therefore, as this soil cannot afterwards settle down much, they have no cause to raise the collar of the plant more than a few inches above the level. When the young roots come to the pressed earth they are more likely to search sideways where the soil is loose, and thus keep nearer the surface, or if some of the strongest do find their way deeper, the more useful ones are sure to spread on either side. When the roots of many trees grow long and fast, as they surely will in a wide pit, they do not make nearly so many small feeding roots as those which are stinted for room. Hence it is that narrow pits at first planting are better in the long run than wide ones; besides, in a wide pit filled at once with good soil, some of it at least will be inert, or say not good for much, by the time it is all occupied by the roots. On the whole, therefore, the best practice is to begin with narrow pits, and to enlarge them by degrees as the tree gets on.

A few years since, Mr. Ayres, one of our very best gardeners, and also amongst the best writers on practical gardening, founded a new plan of making Vine borders on this very principle which I am contending for. First of all he only allows the Vine about four feet wide to spread in, and afterwards adds to the width of the border, by degrees, as the roots increase, the Vine being notorious for making long bare roots in a wide border.

The next step in successful planting is to see that roots that have coiled in the pots are laid out or trained out in straight lines, which we have so often insisted on; but the whole ball need not be disturbed in doing this. Fatal results have often been experienced from a false notion that it is necessary to shake away the whole of the soil in the ball before the roots can be got at. Roots never coil in a pot until they reach the sides; therefore, to do the thing properly, all that is necessary is to unloose the first inch or two on the outside of the ball, and then all the coils may be easily uncoiled, the centre, or the greater portion of it, being left just as it is so that very little risk indeed is incurred—not much more than that in changing a plant from one pot to another. Then, if the plant is loosely tied to a firm stake in the middle of the pit, I can see no reason why the youngest amateur in the country may not plant the rarest tree from Mexico or Peru as successfully as the most experienced gardener; but the best planter in the world, if he ventures to plant out without thus releasing the roots, but merely putting in the ball as it turns out of the pot, is as sure to be defeated in the long run as my name is Donald.

There is another side to this subject well worthy of being put in practice in many instances; an old plan, it is true, but not a bit the worse for that. Let us suppose one has a fine lot of rare things in pots, and that it is high time they were planted out permanently, but some how or other the grower has no place ready for them, or his situation is too bleak to turn them out just yet, or,

perhaps, he has to remove in a year or two to another part of the country. What is he to do? Potting them into larger pots would only increase the danger in uncoiling the roots some day or other, because, if they are now in a coiling state, there would be two sets of coils, in all likelihood, to get free at the time of planting. The plan I allude to is to meet a case of this description. The plants, instead of being planted out permanently, are to be prepared in all respects as if they were to be finally planted—that is, the outer part of the balls are to be gently loosened, and the roots uncoiled and set free; then to plant the whole in flat hamper-like baskets, about two feet in diameter, or a little more, and nine or ten inches deep, and then to be plunged in a border in the kitchen-garden, or anywhere else, if more convenient, and if the rims of the baskets are two inches below the natural level of the place, that will be enough; the plants must all be staked as after regular planting. This is by far the best way to deal with very young plants, whether they are waiting for the convenience of the owner, or merely to be nursed for two or three years, so as to render them more fit to be set out in more open or exposed places in the same garden. The roughest kind of hamper-work is quite sufficient; the diameter stated is the most convenient at the time of removal, and if some of the roots are longer than will reach the sides of the hamper, they may, with all propriety, be coiled round the side, as if they had grown so naturally; indeed, I rather think that it is an advantage to have some of the roots turned round the basket, as that is more likely to cause them to form fibrous or feeding roots nearer the stem of the tree. At any rate, larger baskets are just as likely to prove more dangerous than leaving the plants too long in pots; as if they are heavier at the time of final planting than one man can raise into a barrow, they will not bear the weight of their burden, away they go, and, after all your pains, you might as well have pulled your fine Cypress, or what not, out of the ground, as find, at the eleventh hour, that your rough basket has given way, and the soil crumbled away with it,—a kind of game which I have seen played oftener than once. Last of all, when the tree is finally planted, the basket must be planted with it, and when seated in the middle of the hole break away the sides of it, open an inch or two of the sides of the ball, and if there are, or were, any roots coiled in the little hamper, you will soon find them out, and deal with them like a skilful planter, as you certainly must be before you bring all this to pass.

Now, there is one more point to be thought of, and a very essential point it is. You will go over to the next basket maker, or send him word to get a dozen baskets ready for you by next Saturday; the man of willows has a job on hand for Mrs. somebody, and that we all know must first be finished, and she is so particular, that he must attend to that job himself, and will put your job into the hands of his sons or apprentice, and whatever comes first to hand for them and your hampers will be quite good enough, and by the time your hampers have been three weeks in the ground, you will begin to think you will have a good crop of hampers next year, for they are all of them in full growth! Fresh willows were put together in a hurry, and now they begin to grow—this must be looked to.

There is a certain place, or places, without any particular name, in almost every garden, which ought to be planted now and then, if not every year; and strange to say, none of us writers on gardening ever think to mention anything about it; this place is “*where nothing will grow*,” according to the best authorities. Did you ever know a garden where some spot or corner could not be pointed out by the owner, where nothing would grow, according to his tale? I never did. I have seen many contrivances resorted to, to keep such places from the

eyes of the world, but still, the knowledge of the fact haunts one like a bug-bear, if there is such a creature. A friend of mine could never “get anything to grow” under an old ash tree in his garden, till he saw how it could easily be done in this COTTAGE GARDENER. And I have heard of a man who has “half a mind” to plant a grove of old trees with the *Glycine sinensis*, and make a jungle of it some day, by the process of sinking wood boxes, or old tar barrels, under the trees, fill them with rich earth, and put in stout plants out of large pots. All this is praiseworthy enough, but still something more is wanted, where nothing will grow. From the beginning of last June, to this very date, I have had to plant something or another every week—trees and shrubs among the rest—and now I have got to one of those places where “nothing will grow;” a very steep sand-bank, full of large box-trees, trained up a long way with naked stems, and daylight has been let in amongst them from a new walk made lower down the bank, and when you look up under these box-trees, you see a long way, what should never be seen in a garden, an ugly scene; the sand is held together by the roots of the box, so that between one thing and another, “nothing will grow *there*,” at least they say so, before the garden is full of gentry, who will see the nakedness of the place. In less than six weeks I could cover this bank all over with the liveliest green, if I had a bushel or two of the roots or tubers of *Tropæolum tuberosum*, and I believe this is the very thing, a regular discovery, for all those places where nothing else will grow; light or shade is all the same to it; sand or gravel, dank clay or bog, wet or dry, seem all the same for this otherwise useless plant; but there is no plant without some use, and here is a very useful plant, indeed, for making an unsightly place fit to be seen, and even admired the whole summer. If you have one, it will increase itself just like the potato, only a little faster. It also comes from cuttings, and I would willingly, at this moment, pay carriage for a bushel of the roots from the Land’s End. I would cut and plant them in this sand-bank just as I would so many potato sets, and they would soon cover it, whatever kind of weather might ensue.

GLYCINE SINENSIS.—I once read a very curious problem in the Botanical Magazine, about the number of pollen grains produced on a bunch of flowers, or on a tree of this Glycine. They were said to be less numerable than the hairs of my head. Hence, I conclude some plants of it do really have pollen; and I know one plant that has produced seed in England, and it must have had pollen, but the great majorities of the plants of it in cultivation certainly do not yield any pollen at all. I never could get any; and if any gardener who may have a pollen-bearing Glycine, would be so good as to send me a few unopened flowers, I should be very much obliged to him.

D. BEATON.

GREENHOUSE AND WINDOW GARDENING.

WINDOW GARDENING IN THE NORTH.—We are generally in the habit of associating the love of flowers with a keen perception of the beautiful, and a more than ordinary development of the finer feelings, and the more lofty aspirations of humanity. Hence a garden furnishes no mean commentary upon the habits, the tastes, and moral sensibilities of its possessors. Neatness, regularity, and method without, are generally attended with cleanliness, comfort, and order within. If to all this, in a garden, a love of flowers is seen to be a prevailing characteristic, we then expect to find a relish for all that is tender and refining, and, so far as opportunities present themselves, a taste for all that has reference to

the culture of mind and the expansion of intellect. Hence we so often find beautiful flowers in a cottage window, associated with interesting books, carefully laid on the mantel-shelf, side by side, with the family Bible.

Cases have come under our own observation where the taste for reading, nay, the ability to do so at all, was acquired and maintained after the dormant sensibility for beautiful flowers had been aroused into action. The desire to know more and everything about their new favourites ultimately created the taste for general intelligence. Thus this little book may be of much more importance in a social and moral point of view than at first sight meets the eye. Every one who helps to promote a taste for flowers among his neighbours may thus be as good a reformer, a more successful promoter of all that is truly ennobling, than the more noisy philanthropist. Fiercely using the battering ram against social ills is often not so successful a method for destroying them as *toppling* them over by quietly undermining their foundations. Pollution and error cannot long exist in that mind that has obtained a zest for purity and truth.

Holding these views as to the bettering influence of gardening and flowers, I have often been struck with a seeming anomaly in glancing at some of the characteristics of the lads and lasses of Scotland. *There* there is no want of the ability to appreciate the romantic, the beautiful, and the intellectual. Scarcely a pretty glen, a rambling brook, a lofty hill, or a snow-capped mountain, but has been immortalised in song by native bards; while peasant boys and girls look on them with mingled feelings of awe and admiration. Children have a keen sense of the beautiful in flowers, as they eagerly hunt the *braes* and brakes for primroses, and fill their pinafores with buttercups and daisies. Education, though deficient, is still, so far as the working classes are concerned, considerably in advance of what it is in England. Intellectualism is not confined, as of yore, to abstruse and knotty points in theology, though, even now, many a blue bonneted peasant from the hills would surprise and puzzle a learned bishop. Family feelings and family ties are, as a general rule, strong and enduring, creating thus something truly sacred about the homeliness of home. But yet, with all this appreciation of the beautiful, the intellectual, and the endearing, the sight of which, here in the south of England, we should be so apt to associate with plants on the window-sill, flower-borders in front of the door, and a honeysuckle or sweet-briar bower in a snug corner of the garden; there seems to be something like a feeling among our Scottish friends that the culture of flowers is not *utilitarian* enough to engage the attention of men and women, or even of elder boys and girls. Great improvements, in this respect, have taken place within these ten and twenty years; so prominent, indeed, as to arrest the attention of the traveller who scampers by steam vessel, rail, and coach. Miserable huts still exist, but those biggings, without window and chimney, where the smoke issues through the doorway as best it can, may be looked upon more as relics of the past than as presages of the future. The cottages wear a greater air of cheerfulness and comfort; the dirty pool and *midden* (alias dunghill) close to the door and window have, in many cases, given place to a pretty flower-pot; the walls of many of the houses in villages are covered with fruit trees, roses, and other ornamental plants, while the windows are frequently gemmed with geraniums, myrtles, and twining plants like the nasturtium and scarlet runner. The gardens, upon the whole, are much better cultivated, and there is an addition to the kale and potatoes that used to be almost solely grown, all of which has been partly owing to village and township societies for the encouragement of cottage gardening. Nestling in the suburbs of the cities and towns are many neat and ornamental

spots that would rival, if not excel, similar places and cottage *ornées* near London. But still, as respects window gardening and flower-pot gardening, the working-men and tradesmen in Scotland and the north of England, nay, even their wealthy citizens, are very far behind their compeers in the middle and south of England. It is no exaggeration to say, that in a crowded alley of St. Giles's, before the besom of improvement had swept the *rookeries* away, I have seen more plants in windows than could be witnessed in some of the finest streets in Edinburgh or Glasgow.

We venture no comparison as respects the social and moral status of the inhabitants of these localities; but of this we are certain, that the St. Gilesian masculine huckster woman, that tended so carefully her favourite plants, had beneath a somewhat rough exterior, a depth of pure feeling, which only required to be unfolded to attract the most fastidious and refined; while the perhaps more strictly moral, better educated, more intellectual Glaswegians, would, in addition to their other good qualities, be rendered still more humane, generous, tender-hearted, amiable, and kind, by a more intimate and personal acquaintance with the refining influence of flowers. Keen, plodding, hard selfishness is one of the great canker-worms in society. The loving of flowers solely for their loveliness, contains in it so much of the unselfish, that as one of the secondary agencies, we have no doubt it will be ultimately successful in helping forwards a healthier, purer, and happier state of society. Believing this, and knowing that *The Cottage Gardener* circulates north of the Tweed; knowing, also, that there is a pleasure in cultivating flowers, which those who have never done so out of love for them can form no idea of, and unwilling that that pleasure should be confined to the comparatively few, I have ventured upon these hasty remarks, trusting that in my next hurried visit to Scotland the love of flowers may be rendered much more conspicuous. Many of our Scottish friends will be visiting the Crystal Palace, the world's wonder, but whilst seeing much there and elsewhere to wonder at and admire, there is much in the gardens of England, from that of the prince to that of the cottager, and even at many of the railway stations, whence lessons may be learned to be practised in the flower plots and windows of their own dear homes. In these remarks I have purposely refrained from alluding to the professed florists of Scotland, who have long and carefully cultivated their favourites.

By the time this reaches the press many of the greatest difficulties of window gardening will be over, winter residents will now stand out of doors with a little protection. All the hardier things may be transferred outside the window-sill. Many things, such as *Geraniums*, *Fuchsias*, *Verbenas*, *Calceolarias*, &c., may either be potted off singly, or transferred to boxes and vases, to decorate the balcony and flower-plot. The tenderest things, or such as you wish to grow, may be kept inside the window, and carefully attended to as respects light, air, and water. Many things, such as *Geraniums*, *Calceolarias*, *Fuchsias*, &c., may now be propagated where only a few are wanted; and these, when struck and half starved in the dog days, will make better plants for standing the following winter, than those propagated in the autumn. Where variety is an object in window gardening, and floral display besides, young plants only in small pots should be kept over the winter, the older ones being thrown away as soon as they have done flowering. Many things may be successively shifted for summer blooming. The early *Cinerarias* now fading, may be planted out of doors in a good border, and be either lifted again, or better still, have stout suckers taken from them in September.

R. FISH.

HOTHOUSE DEPARTMENT.

EXOTIC ORCHIDACEÆ.

(Continued from page 102.)

ORCHIDS THAT THRIVE WELL IN POTS.

ODONTOGLOSSUM BICTONENSE (The Bicton O.); Guatemala. Sepals and petals a green ground, with large red spots; tip of a triangular shape, and of a pleasing pink colour; the flowers are produced rather thinly on an upright stem two feet high. A pretty desirable species. 21s.

O. CITROSMUM (Lemon-scented O.); Mexico. The flowers are produced on long drooping racemes, springing from the base of the last-formed pseudo-bulbs. They are of the most lovely colours,—snow white, beautifully and softly tinted with rose; each flower is large, and symmetrically placed on the stem. It has a delicious scent, like lemons. We had the honour to flower this fine species, for the first time in this country, whilst we had the charge of the fine collection belonging to F. Brocklehurst, Esq., of the Fence, near Macclesfield; a collection still kept up, we are happy to say, with spirit and well-managed, by Mr. W. Pass, the present gardener. This is a most lovely and every way desirable species, and not difficult to cultivate. Strong plants, 42s.

O. CERVANTESII (Cervantes' O.); Guatemala. Sepals and petals brownish green, barred with chocolate; tip large, white, and barred across towards the base with rich brown. A small, very pretty species; will thrive, also, well on a block with a little green moss fastened to it. 21s.

O. CORDATUM (Heart-flowered O.); Mexico. Sepals and petals yellowish green, prettily spotted with rich brown; tip pure white, spotted and barred with purple and brown. It is of a cordate or heart shape, hence its specific name; a pretty species, but scarce. 42s.

O. GRANDE (Magnificent O.); Guatemala. Sepals and petals cream-coloured ground, with the tips of pale yellow; the lower part is richly spotted and barred with brown, like the back of a tiger; lips large, almost round, and turned up at the edges, white, blotched and barred with rosy brown. The flowers are of an extraordinary size, frequently measuring five or six inches across. They stand on an upright stem, from nine inches to a foot high. These often bear, when the plant is strong and well-managed, as many as four or five of these truly magnificent flowers. The above is but a faint description of this splendid orchid. There is, in the collection at Pine Apple Place, a fine variety, with all the colours more highly touched and of a more elegant form. This fine epiphyte should be in every collection. It is a very accommodating species, for it will thrive either on a block, in a basket, or in a pot; but we consider the finest plants and flowers are produced in the latter. No collection need be without it, for blooming plants may be obtained for 21s, and smaller ones for 10s 6d.

O. HASTILABRE (Halbert-lipped O.); Mexico. Sepals and petals yellow, richly barred with brown; lip halbert-shaped, white, spotted with crimson. A most beautiful and rare species. 63s.

O. LÆVE (Smooth-lipped O.); Guatemala. Sepals and petals pale yellow, thickly blotched with chocolate; the lip white, barred with violet. The flowers are produced on an upright, much-branched stem, about fifteen inches high. A desirable, handsome species, but rather scarce. 42s.

O. PULCHELLUM (Pretty O.); Guatemala. The whole flower is of a clear ivory white, excepting the plates on the lip, which are bright yellow. This is a beautiful species, lasting a long time in flower. 31s 6d.

O. ROSSII (Mr. Ross's O.); Mexico. Sepals of a yellowish green, spotted with chocolate; petals white, spotted and barred with brown towards the base; the lip is pure white. The bright pure white lip lying, as it

were, in the centre of a rich green, yellow, and blue star of three points, produces a peculiarly beautiful appearance. This is a small species, with short stems, producing two or three of its beautiful flowers on each of them. Very desirable. 31s. 6d.

Culture.—This fine genus of orchids, being all natives of the comparatively temperate clime of Guatemala, do not require so high a temperature in our hothouses as any other of the tribe, excepting, of course, those from the same country. This applies more especially to the fine *O. grande*. During the season of growth, the heat by day, with sun, should be 70°, without sun, 65°. In the season of rest, the heat need never exceed 50°, nor be allowed to fall lower than 45°.

Moisture.—When growing, water should be given freely at the root, but not so much as to make or keep the compost so wet as to be like a peat bog. It should be thoroughly wetted at the time of watering, and then such an interval be allowed as would allow the compost to become moderately dry in the interior, and quite so on the surface. This, with sunshine every day, will happen, perhaps, every third day; but in dull weather it may be a week before the plants require the watering at the root repeated. When the plants have made their annual growth, this liberal supply of water must be considerably, but gradually reduced. At the first, the intervals may be a fortnight between each watering, then extend it to a month, and for two or three months in winter keep them perfectly dry, excepting the sun should shine for several days successively, and the pseudo-bulbs and leaves appear to shrink considerably. In such a case, a little water judiciously applied round the inner edges of the pots will be useful and necessary. The internal air, also, should be managed similarly. In the growing season it should be saturated with moisture; but in the season of rest it should be kept moderately dry.

Soil.—The mixture we have so often described, consisting of rough, fibrous, open peat, chopped sphagnum, mixed with broken potsherds, and small pieces of charcoal, suits the *Odontoglossums*.

Drainage.—As these plants require, at certain seasons, a superabundance of water, and as, if allowed to stagnate about the roots, it will be fatal to them, a complete drainage is indispensable. For plants that are large, or even of moderate dimensions, it is a good plan to turn a small pot over the hole at the bottom of the pot in which it is intended to place the plant; then fill round this small pot with largish pieces of potsherds, till they are level with its bottom. When this is done, lay upon them a thin covering of small potsherds, the size of boys' marbles, and, lastly, a thin covering of small pieces of charcoal. It is then well and thoroughly drained, and is ready to be used for potting.

Potting.—The season for this operation depends entirely upon the state of the plants. They need not be repotted till the buds at the base of the last-made pseudo-bulbs begin to make their appearance. This, if the period of rest has been duly managed, will happen at the time when the days begin to be ten or twelve hours long. The increased light, and natural heat of the sun, will stimulate them to begin to grow. When this is perceived the compost should be prepared, properly dried, so as to be neither wet nor parching dry; it should, also, be put in a place where it will become of a mild temperature. These points are necessary to attend to, because if the plants are potted into a wet, cold compost, it would be very injurious to them, would check the attempts to grow, and might even cause the last-made pseudo-bulbs to rot and perish. The plants then may be removed, two or three at a time, into a warm room to be potted; shake them carefully out of the old compost, cut away all dead roots, dress off all dead or decaying matter, clean off all insects, and wash every

leaf and pseudo-bulb with a sponge dipped in (and squeezed when taken out of) tepid water. This will cleanse the leaves from dust, and any green matter that may have accumulated on their surfaces during the winter. When all this has been effectually done, put a sufficient quantity of the compost in the pot upon the drainage to raise it so high as to allow the plant, when it is potted, to be elevated a little above the rim of the pot. Then fill in round the plant as much compost as will give the appearance of a little hillock in the centre of the pot, upon which the plant will stand. Should the plant feel loose and unsteady, fasten it as firmly as possible, by placing in the pot some hooked pegs, catching with the hooked end the plant between the pseudo-bulbs. Finish the operation by pressing gently with the hand the compost round the plant, and close to the sides of the pots, leaving about a quarter of an inch next the rim to catch the water. The repotting is then completed, the plant should be instantly returned to the orchid house, and placed upon the floor. Before it is put into its place give a good watering through the syringe, using a rather strong pressure. This will settle the compost firmly to the plant, and no more water will be required for a week or ten days, according to the state of the weather.

T. APPEBY.

FLORISTS' FLOWERS.

GLENNY ON FLORISTS' FLOWERS, PLANTS, &c.
NEWLY RAISED.

ALTHOUGH my *Properties of Flowers and Plants* is a volume generally received, and by many societies advertised as their standard by which novelties are to be judged, nurserymen and gardeners, as well as amateurs, are too apt to overlook some of the leading points, and, caught by some apparent novelty, frequently pronounce a flower first-rate which is only middling, and certify as useful subjects which are altogether unworthy. The models of perfection being ideal, are not likely to be equalled; yet those flowers which come nearest to the standard are the best. Novelties must be judged by comparison with an ideal standard, which all men cannot carry "in the mind's eye," and it is only after being long accustomed to censorship that any one can do justice to novelties. I have found some counties far behind others in taste, and men are apt to judge seedlings by what they have around them. I have seen whole tables filled with seedlings that would have scarcely been tolerated years before near London; and as I know, by daily experience, gentlemen as far off as the north of Scotland, and in other distant parts, send me expensive packets of flowers, that show the owners to be in a hopeless state of unacquaintance with our advances for the last few years. They buy seed of which they know nothing, or save it from any kind of flowers they may possess, consequently, not one in ten thousand is likely to be good. Nature is always struggling to recover lost ground; and as the more we remove a plant from its original simplicity, the more tender it is, and the more difficult generally to save seed from, so if we sow from the very best, there will be ten worse than the parent for one that is better. Still less successful are we if we save from a collection indiscriminately, for then we rarely obtain any so good as the best. The more common yield seed most plentifully, and we are justified in saying that there is but one way to deserve success, no matter what subject we take up, namely, to strive to do our best. Let us, therefore, select or procure half a dozen of the very best varieties that can be had of the plant from which we wish to raise seedlings, and let us clear the garden of the rest. If we cannot sell them, let us give them away, and if nobody will have them, let us throw them away. Put these selected half dozen together, let

them cross themselves, save all the seed you can, and sow every grain you save. By this mode you may have twenty worse than the parents, but you may have one better. I procured six *Cinerarias* a year ago, the best I could get, not another was in the garden; I sowed the seed saved as soon as it was ripe, and the plants are now coming rapidly into bloom. They are aggravatingly good, but not good enough, and I may not have one sufficiently striking to please my rather fastidious taste; but if I should not succeed altogether, I shall be able to find among them half a dozen novelties to seed again from. The instant I saw a promising one I took it to a separate house, for I am convinced that seed saved indiscriminately from the whole, would go back to the most common worthless style. I have mentioned my mode of saving seed, because I desire to see all amateur florists' advance, and I can assure them that to begin with purchased seed, or seed that people give away, is perfectly hopeless, heartless, work. No matter whether it be pansies, dahlias, auriculas, polyanthus, geraniums, or any other florists' flower, discard everything at all second-rate. If only two or three can be got superior to all others, depend on those alone for seed.

Whoever may hereafter think it desirable to have my opinion, will only have to send well-packed specimens to the office of THE COTTAGE GARDENER, 2, Amen-corner, Paternoster-row, and I recommend them to arrive in London on Tuesdays, though I do not make it a condition. If it be proposed to send so as to arrive on any other day, a letter, a day or two before, to state it is coming would be advisable. The only conditions required are: *first*, that everything shall come free; *secondly*, that the subjects have names, or the party be bound to give the names I append to them; and, *thirdly*, that the raiser's name and address be sent with the subjects, with any initials that are to be used; but flowers, worth sending out, will only be noticed by name.

It is very difficult to understand the awards of our new Seedling Societies. The *National Floricultural* appears to have several distinctions: first and second class certificates, and certificates of commendation. The *London Floricultural* appears to have only one, and that the first class; and the *Society for the Encouragement of Floriculture* has but one certificate, which is only granted when a subject is a decided improvement upon what we already possess, or such a new colour as renders it desirable, and as good as our best in form. Beyond these first class certificates they recommend flowers, if there be any ground for a recommendation, although they may not rank higher as florists' flowers than some we possess already; and this I think the most rational plan, because a *Verbena*, a *Cineraria*, or a *Geranium* may be worthless as a florists' flower, and yet be a prize to anybody as a bedding flower. "*Recommended for its fine dwarf habit and colour as a bedding flower*" would be a useful report, for the public would know precisely what to expect. The price of a bedding flower would be paid without grudging by those who wanted a new bedding plant, while a florist would not think of it. I have been disappointed more than once, and many have shared my disappointment, when, calculating upon a first class certificate indicating a first-rate flower, I have ordered it, and found it not so good as many that I already possess; and I throw out for the benefit of the *London* and *National Societies* a hint that they should make a special report on a flower, that everybody may understand what they really do mean. Let us, for example, take Mr Henderson's new *Cineraria*, *Marianne*. If they had certified that it was "a bright tipped variety, very close, not much scalloped on the edge, rather cupped, and very symmetrical, free from ribs, of good substance, and of medium height, a tolerably abundant bloomer, and better than average habit, and, moreover, that it has nearly lost the notch," everybody could form an idea of its general character; and if the Societies mean to be useful they must come to this. All such vague terms as "good form," "a good show flower," &c., must be left out of the report. They mean nothing—they have meant nothing for years; one

half of the judges have turned out things, year after year, described as of "good form," or as "good show flowers," and they have proved very inferior.

Let us take another of the first class certificates given to a *Pelargonium*—Mr. Hoyle's *Chieftain*. This flower should have been reported as a pretty variety in a large collection; call it crimson, or any other colour that means something between purple and scarlet, but having the under petal standing up away from the other four, and not a good trusser. The fancy *Pelargonium* raised by Mr. Ayres, *Formosissimum*, was awarded a first class certificate, and this was on tolerably safe ground, because it was shewn as a seedling last year, and I had described it as one of the very best formed of all the family. The colour is not striking; but when a flower without any particular fault is a decided advance towards the ideal model laid down, it may, without much damage to the public, be classed among the best. But to justify a first class certificate, a flower ought to be better than anything we have got of its colour, or a new and desirable colour without any condemning fault. Now, *Magnet*, Mr. Hoyle's *Pelargonium*, though it could not be fairly called a first class flower, is worth a dozen of his *Chieftain*. The colour is desirable, it is a good trusser, and the flower has no fault great enough to put it out of half a dozen exhibiting plants. The *Auricula*, to which a first class certificate was given, was not nearly so good as some we already possess. It was called the *Beauty of Bath*. The plant was not sufficiently matured to judge at all; it shewed several faults that would condemn a flower: the divisions reached into the paste, and the footstalks were so short, that if ever it bears seven pips, unless the footstalks come much longer, the pips must be crowded, and form a small round head, instead of displaying the whole in one face. But while it was exceedingly erroneous to give it a first class certificate, it would have been unjust to condemn it, because it may come better when matured. The judges might have said it was promising; but it is an even chance that we may never see or hear of it again, because, if it does not come better next season, the grower will throw it away.

Lady Hume Campbell has been mentioned in the papers as a new *Cineraria*, but it was noticed by me last year. It is a pretty blue-edged flower, very striking, but deeply notched; showy in a collection, and the colours well defined, but the notch is a great drawback. Mr. George Smith has shown two white *Cinerarias*, both an advance upon our present whites, and very different from each other. These are both above the average, and either of them would be an acquisition—*Alba Magna* and *Queen of Beauties*; but a special report as to their qualities would have been far better than first class certificates, simply because there are many whites. These flowers are better than the average for symmetry and closeness; they open very flat; the habit is pretty; one of the disks is lilac, the other dark; and one of the whites a different shade to the other. It is a question with me whether a self should have a first class certificate, since no better could be given for a white ground with a black, or a blood-red, or a dark purple well-defined ring round it. Again, Mr. Ayres' *Orpheus* is a purple self *Cineraria*; and I object to his first class certificate on the same ground. *Lady of the Lake Cineraria* is a desirable flower, and quite as much deserving a first class certificate as some which had it. In fact, it comes to this: If I send metal to the Assay Office, the report is that it contains so much gold, so much silver, and the rest is, of course, alloy; and if flowers are to be tested, the report must be a similarly true description of their good and bad points. Not two are of the same degree of merit; and, therefore, unless they are surpassing fine, they have no business to be placed among the highest class that can be named.

G. G.

FLORISTS' FLOWERS CULTURE.

AURICULAS and POLYANTHUSES continue potting and placing in summer quarters, if not already done (see last week's directions). Keep a good look out for slugs, and destroy them. Should dry weather prevail, the red spider will very probably attack the leaves of the Polyanthus. Its presence may soon be observed by the

leaves becoming spotted and yellow. As soon as that is perceived no time must be lost in destroying this pest. Mix some flowers of sulphur in water, carefully lift up the leaves, and with a sponge dipped in the sulphur water wash every leaf. The action of washing will destroy the greater part, and the sulphur left on the leaves will prevent the rest from feeding upon them. It may be necessary, when they prevail much, to wash the upper side of the leaf as well as the under. Do not think this labour and attention unnecessary, or of no consequence. Too often the vain hope that wet weather will destroy this insect has ruined many a promising plant, for want of a timely application of preventive or destructive remedies being applied.

Seedlings, if sown early, will now be in a fit state for transplanting. Fill a box, or some shallow wide pot, with a rich light soil made with light, fresh, turfy loam, and well-decomposed leaf-mould; sift the uppermost inch through a finish sieve, press it gently down, and plant the seedlings in it in neat rows about two inches apart, and one inch from plant to plant. Water gently, and place them under a frame facing the east; shade from severe sunshine, and give air on all favourable occasions.

VERBENAS intended for exhibition the first week in July should now be showing their trusses; those in pots must immediately have their last shift. The best kind of trellis for this purpose is a flat one about a foot or eighteen inches across. It may be supported with common sticks made of deal, and thrust firmly into the pots; tie the trellis to them in either a sloping position or quite horizontal. Let it stand four or five inches above the pot. Train the plant to it, tying them with mat, and stopping the leading shoot, so as to have a sufficient number of branches to cover the trellis. Allow just a sufficient number of trusses of bloom to arise so as to allow them to stand at an equal distance from each other without crowding. The effect of this arrangement will be excellent. Water every third time with liquid manure, and keep them under a cold frame or pit, shading from hot sun when in bloom.

T. APPLEBY.

THE KITCHEN-GARDEN.

ROUTINE WORK.—*Globe Artichokes*, *Asparagus*, *Seakale*, and *Rhubarb*, should every one come in now for a good share of attention, keeping the earth round about them loose and open; thinning off the suckers and shoots of the *artichokes* and *kale*, and applying liquid-manure frequently at this season, which will be the means of providing a good foundation for the next season's produce, whilst, at the same time, where mulch of any kind can be spared, each of the above crops may be mulched with considerable advantage.

The season is also arrived for mulching the late strong-growing *Peas*, *Scarlet Runners*, *Dwarf Beans*, *Cauliflowers*, &c. A liberal sowing of *Coleworts* should be made, and attention given to the pricking out and watering of the main crop of *Celery*. One thing to be observed, with regard to pricking *celery* is, of course, that the earth should be both healthy and mellow, and the plants pricked lightly, with the seed-leaves, and collar of every plant kept up well above the surface of the soil. Sow late *Peas*, *Beans*, *Spinach*, *Lettuce*. Small sowings of *Radishes* and *Small Salad* should be made in partially shady situations; keep the surface of the ground about every crop well open and surface-stirred.

Mushroom-beds should, at this season, be made in caves or cellars, or the coldest situation that can be procured, free from draughts or currents of air—the latter are not at any season congenial to the *Mushroom*. Beds that have for some time been in bearing, should be assisted, when the surface becomes dry, by the applica-

tion of clear liquid-manure, brewed from the excrements of the cow, sheep, or deer. *Mushroom Spawn* should now be provided for another season. To prepare, take equal portions of fresh horse and cow-dung, and add one barrow or basket of good fresh holding loam to eight of the dung; incorporate it well together, by turning and beating it with the back of a three tined fork, or other tool, to break the lumps; after which, it should be moistened sufficiently, and worked over to the consistency of stiff mortar, when it may be moulded into bricks or cakes of any desired size and thickness, or it may be spread on an even floor, two inches thick, making it smooth and even all over, and allowing it to remain till solid enough to cut into cakes, which should then be stood up edgewise to dry. When moderately dry, they should be secured and packed in some snug

corner of a shed, and each cake or brick of every alternate layer should have a small piece of spawn placed in it, by scooping out a very small hole; if maiden spawn can be procured from a mill-track or other place, so much the better; and after the whole is packed, it should be covered over with good stable mulch, in order to maintain a moderate warmth, and prevent the effects of draughts, &c. Great care must be taken to maintain only a moderate warmth, from 75° to 80°, if more, it will perish the spawn. If all goes on well, the spawn will have sufficiently run in about a month or six weeks to unpack and take out the greater part of it, which should be placed in a moderately dry place, to prevent its further running or exhausting itself. If properly taken care of, mushroom spawn may be kept for years good.

J. BARNES.

MISCELLANEOUS INFORMATION.

OUR VILLAGERS.

By the Authoress of "My Flowers," &c.

It is remarkable how people are influenced by their early habits, even under the greatest disadvantages, and to their extreme old age. How important, therefore, it is, that the poor should be taught, as far as possible, to be clean and comfortable in their habits from their earliest youth, that when they are old they may not be objects of disgust to their fellow men.

There is a poor old man in our parish, who has for many years received the scanty relief that is afforded to paupers in this district, which, in his case, is only sixpence a week and a loaf. He is alone in the world—his wife and children are dead, and, as parish relief forbids labour in every case, old T—— is obliged to be content with his pittance and sit with his hands before him. He is quite able to earn sixpence or shilling now and then, although unequal to support himself by regular work; but he must not do this, because if any actual work is done the parish pay is stopped.

Poor old T—— is one of the cleanest old men I ever saw. He is always neatly dressed—no rags; and, what is equally agreeable, no snuff and no tobacco about him. How he manages to be kept so clean I cannot tell; but the old proverb "where there is a will there is a way," will be found true while the world lasts, and is strongly exemplified in this old man. We were surprised, one day, when taking a long walk, to find T—— sitting at a gate that opens from a road upon a large common. There is no cottage near the place, and carriages and persons on horseback are constantly passing through this gate, which is a very strong and heavy one, and they are a good deal inconvenienced by the interruption. At this gate, which is nearly two miles from the village, old T—— had planted himself, in the hope of picking up a penny or two by opening it for passengers. It was a bitterly cold day, the wind swept over the common with keen severity; but the old man had scooped out a sort of nook in the thick hedge, and was tolerably screened from the cold. On expressing surprise at seeing him so far from home, he said his weekly money was so little he could scarcely get along, and he thought if he could earn a penny or two only in the week, it would do to buy soap to wash his clothes. We were very much struck by the old man's words. No one before had ever troubled themselves to obtain soap; beer, and tobacco, and snuff have been wished for, and have often been bought with money that ought to have found bread; but soap was altogether a new want, and it took us quite by surprise. It, however, explained the secret of the man's tidiness of dress. He was fond of cleanliness, and therefore he *could* be clean.

Now, on the other hand, there is an old man who is a favourite with us, because he is so quiet, and harmless, and inoffensive, but whose love of soap has never yet developed itself. He is a religious minded man, and therefore it seems the more remarkable; but his want of cleanliness is sad and striking; his appearance is more that of a figure set up to frighten birds than any other thing, and from

having terribly inflamed eyes, his first impression upon strangers is one of extreme unpleasantness. Yet his meek and lowly disposition, his kindly smile and grateful-heartedness make friends for him, in spite of the imperfections of the outward man. He is so content with having *nothing*; for many, many months he had nothing allowed him but a loaf, and was entirely dependant upon the daughter, who earned only three and sixpence a week; he is so grateful for the most trifling kindness, and so humbly, yet confidently rests upon the mercy and faithfulness of God to those who trust in His Word and promise, that it is impossible not to feel a kindly interest in all that concerns him. Yet, I remember, the first time I saw him, a great many years ago, when no one cared much about him, and he was certainly worse-looking than he is now—I was both astonished and alarmed for a moment or two. Now these two men have lived in the same parish all their lives, they are much about the same age, and their station in life is the same. Yet the difference between them in outward things is great and marked, and it is all caused by the love of cleanliness and the love of dirt.

When people are idle, and wicked, and given to drink, and regardless of God and His laws, we are not at all surprised to find they are dirty and wretched in their looks and dress; but we rarely find people possessing godliness, who do not look neat and clean, as well as cheerful and happy. Order and decency in person, and dress, and house, almost necessarily come on when the heart is turned to God, because idleness, sloth, and negligence are by degrees put away, as His commandments prevail with us and influence our conduct.

The poor should remember that no animal loves or thrives in dirt. The cottage gardener and the humble labourer may take a lesson from what passes under their own observation. Pigs are said to be dirty animals by nature, but we have only to examine the difference there is in them when they are kept clean, or suffered to be dirty, to convince ourselves that they do *not* thrive in uncleanness. When the sty is clean and dry, and there is plenty of nice straw in the shed, the animal looks wholesome, and healthy, and happy; but when suffered to "wallow in the mire," there is a sickly appearance in the poor creature, and a dejected expression in its face that we perceive in a moment, when we have been in the habit of seeing pigs carefully and delicately kept. It is just the same with human beings; and as they have reason and understanding, it is very shocking to see them more inclined to live and be happy in dirt, than the beasts that perish. All animals take pains and delight in keeping themselves clean, birds and beasts will lick themselves, or pick their feathers and plume themselves daily; but human beings are to be found who will go day after day without washing themselves or their clothes, thereby not only making themselves disgusting to their fellow-creatures, but causing many diseases, increasing

others, and persisting in habits of sloth, and carelessness, and waste, that are quite opposed to the commands of God.

It is of the greatest consequence, therefore, that children should be early taught to be active, and neat, and clean, not because it is simply good for their health, but upon *principle*, because it is part of their duty as Christians, as well as reasonable beings. Cleanness of "heart," and "hands," and "way," is strongly, and continually enforced by the Word of God. Let us strive with all our might to obey His commands in a spiritual sense, remembering, at the same time, that scriptural precepts were constantly illustrated by customs and practices that were wise and good in themselves, and, therefore, sanctioned and approved of by the Lord.

Let the poor, instead of squandering their little earnings in drinking and smoking, buy bread or clothes for their children, and always contrive, like poor old T—, to find a penny or two "for soap."

ALLOTMENT FARMING.—JUNE.

HAY-MAKING.—Finding that several subscribers to THE COTTAGE GARDENER desire information on this head, we beg to precede our general monthly remarks by a few hints concerning this very necessary procedure. Now, although few mere allotment holders hold as much land as will keep a cow, yet many amateurs, and others in a small way, possess the opportunity, and, as in duty bound, we must endeavour to assist them.

One of our correspondents inquires thus—"1st. How am I to know when the grass is fit to cut? 2nd. How to make hay when it is cut? 3rd. How many persons ought I to have at command? 4th. How long should the grass remain to make a fresh shoot before I turn my cows on it?" We will endeavour to answer these seriatim, and add general remarks.

Meadow land, intended solely for cows, should not be suffered to become so ripe as that for horses. Persons, however, who are somewhat tightened for land, feel compelled to suffer the grass to stand as long as it continues to increase in bulk; but this is, in our opinion, a short-sighted practice, and shows plainly the want of sufficient forecast and ingenuity in providing root and green crops to assist the haystack. Some grass lands depend for their bulk chiefly on bents or seed stems; others more on what is termed bottom grass; and some equally on each. Every field manager should take this fully into consideration, and cut his grass accordingly. In the first case the seeds of rye grass, oat grass, &c., are so abundant in seeds, and these seeds of so much quality, that it becomes important so to cut it as, whilst the nature of the bent is not lost, the seeds shall have attained some degree of maturity, especially if for horse diet. In the second case, where much "fay" or under grass exists, the bents become decidedly a secondary consideration. This kind is much fitter for cows than the last, and may stand until its growth becomes nearly stationary. The third case invites an equal consideration of the bent and the under growth; and the policy as to cutting must, of course, be a compromise between the two former. We may here observe, that in the handling of "bent" grass it is best to cut in time, the more especially if for cows, as they like soft hay; and, moreover, we have known grass of this character shed at least half its valuable seeds in the ground, through the great folly of suffering it to stand too long in hopes of increase. Where any doubts exist, lean, we say, to early cutting, especially for cows.

As a general maxim, founded on the average of seasons, it will be most safe to get the hay all cleared away before the last week in June; for that, and the two first weeks in July, are, we should say, five years out of seven, the worst of the haymaking weather. Whenever the strawberry begins to ripen it is always time to think about grass cutting. If the crop is late, we would let it stand over, if possible, to the second or third week in July.

HAY: HOW TO MAKE.—As a preliminary remark, let it be observed, that it is a good maxim to have hands enough, and even to spare, for a few days. It is a kind of business which now and then requires the utmost dispatch: a dawdling haymaker is truly a pitiable character. Persons who hold allotments, root ground, or gardens of any kind, should endeavour to make the one play into the hands of the other.

Thus, nearly all the complemental or finishing processes with the Swedes, the mangold, the carrots, the parsnips, the potatoes, &c., as to weeding, soiling up, &c., may be reserved a week or two behind their true time, where hay-making is combined; and even the mowing of lawns, and other gardening work pertaining to small proprietors, in order that, having plenty of hands, they may be called at a moment's notice to the hay field, and return to plenty of work as speedily, if fitful weather supervene. This forecast we consider a master-stroke of out-door economics, and will, if well carried out, prove not only an avoidance of extra expense, but a source of much profit. Every labouring haymaker should come to work provided with a fork at least, for this has to perform the bulk of the business; rakes the employer should provide. An acre and a half is a good day's work for a mower, who, to perform this, must begin by four o'clock in the morning. All the grass mown before ten o'clock may be tedded out, if the weather is fine, immediately; and one point of great importance is, to see that every "cock" of grass is completely shook to pieces. This done, it may be turned again if time permit, and after dinner it should be drawn by the rake into what are termed windrows. The weather being fine, good haymakers will get it into grass cocks the same evening.

THE SECOND DAY begins with tedding out what has been mowed since the commencement of tedding on the day previous, as before. This done, towards ten or eleven o'clock, the grass cocks of the first day must be shaken out into beds, called "staddles" in Middlesex, about four or five strides in width; the spaces between the staddles being raked clean immediately. This done, the staddles may be trimmed, and then turn the tedded grass as before directed; and this should be completed, if possible, before noon. Afternoon, the staddles are raked into "double windrows," two persons raking towards each other, from the two outsides of the bed or staddle; and these will be about two good strides apart. The tedded grass may now go into single windrows, as in the first day; and next, the double windrows formed into middle-sized cocks, and, if possible, the single windrows put into "grass cocks."

THE THIRD DAY.—The tedding, &c., of other mornings proceeds as before stated, everything, if possible, in due succession; and this day, if the weather has been fine, the first day's tedding will be fit to carry. If the weather turns cloudy, and bad for drying, the grass cocks should be got into double windrows, and the tedded grass into single windrows. If the middle-sized cocks, called "bastard cocks," are not quite fit to carry, they had best be made into full-sized cocks, and clean raked up, the rakings put on the top of the cocks. Then the double windrows may be got into bastard cocks, and so on with the rest of the routine. Through all the proceedings let rain and dew be prevented penetrating the hay, by cocking, &c. As a maxim, one mower will keep from four to five haymakers agoing, part of which may be women. If the weather prove uncertain, of course the process will not proceed with such rapidity, and care should be taken not to spread more out than can be got into cock the same day. If wet weather ensue, and the cocks have to lie several days, the swarths, &c., should be turned sometimes with the rake, to prevent their getting yellow. Throughout the whole of the proceedings the most constant and vigilant personal superintendence is necessary. Every one should provide himself with a rick-cloth, and if a secondary sheet could be kept, to throw over the cart or waggon in an emergency, so much the better.

We now conclude the hay affair by answering our correspondent as to his fourth question. Many good farmers manure their grass land close on the heels of the hay harvest, and it is not bad practice, as throwing much strength in the afterswarth and providing for the succeeding year. Those who have but one plot, however, should, if possible, not turn in cattle until it is nearly ankle-deep again; close browsing on the heels of mowing tends to overpower the root.

GENERAL ALLOTMENT MATTERS: ROOT CROPS.—*The Mangold* sown a few weeks since will now be ready for singling out. This must not be done at once; the first thinning may merely consist of removing one of the duplicates, so as that no two may touch. If the weeds have got a-head

they should be removed first, and on the close of the operation the hoe may be worked through them. If slugs attack, apply the mixture which we shall shortly advise. If a portion of the crop has missed, it is well to know, that seed soaked in water, warm as new milk, for nearly 24 hours, and then spread on a damp cloth in a cool closet, until the first sprout appears (which it will in two or three days), will, if sown carefully, be fit to keep tolerable pace with the rest of the crop.

THE SWEDES will also be up, especially those to remain without transplanting; keep them clear, and single out as directed for the mangold, which latter, we ought to have stated, may be thinned finally about eight to twelve inches apart: Swedes, finally, seven to ten inches. Clean weeding, progressive thinning, and the use of the hoe, must form their subsequent culture. As before observed, those cottiers or others who intend to follow potatoes or summer crops, with Swedes transplanted, must sow accordingly; success, however, may not be expected from a sowing later than the first week in June, and, indeed, then the soil must be very good.

CARROTS.—Those getting in rough leaf must be kept closely weeded; no plant is sooner injured by weeds than the carrot. By suffering weeds and the plants to wait for a timely thinning many a crop is seriously injured. Always thin out during dull or showery weather. A bed of the Horn kind may be sown any time through June if the soil is mellow and rich.

PARSNIPS.—Weeded and thinned as the carrots. Final distance of the large carrots, four to six inches; of the parsnip, six to eight.

THE VARIOUS GREENS.—This is a various and important section, and foremost, as an allotment affair, we must still place the green kale. We would have cottagers, and all small holders, get in all they can, especially where a cow is kept; they are so very hardy, and, if the ground is good, so profitable, and, withal, so early in spring produce, that too much can scarcely be said in their praise. The thousand-head cabbage, too, belongs to the same class, and even the Brussels sprouts are useful things. The allotment man should plant no greens but what will endure our severest winters; dabbling in brocolis, and such-like, is too much of a gambling transaction for a "lackland." Savoys, therefore, and others of this section, we pass by for want of space for the present.

MISCELLANEOUS AFFAIRS.—Peas, of course, will have sticks as they advance; and what are termed "ticers" (short spray) should be placed first, and then enclosed by larger sticks. Broad beans should be well soiled up in the stem to prevent wind waving; and, as they begin to pod at the lower tier, the tops may be successively pinched. Kidney beans require a little soil drawn to their stems, and to be kept free from weeds. Runners will want stakes before the middle of the month; the best may be put to the peas, and those too tall, or lean-of-side spray, will do for the Runners. Spinach may be sown for a strong autumn crop in the last week; and coleworts from Midsummer until the first week in July. A sowing of Lettuces may be resumed in the end of the month. As a luxury, a celery trench may be planted about Midsummer; and leeks, planted after the manner of celery, before Midsummer. The last is a profitable thing.

THE ONION AND CARROT GRUBS.—These are two of the greatest pests of the vegetable garden; and to this day we are not aware of any certain cure or preventive. Remedial measures must be mainly relied on. Soapsuds sprinkled weekly on them during June we have known to answer; probably by proving obnoxious to the fly which blows the eggs.

MIXTURE FOR SEEDS, &c.—We are in the habit of sprinkling every seed-bed or drill of vegetables, annuals, &c., as soon as they spring, with a mixture composed of cinder-ashes and sawdust, equal parts. The cinder-ashes are clean riddled, the mere dust rejected, and all the larger particles; indeed, our sample is of the size of radish seed. The sawdust is as new as possible. This we have applied to every suspicious crop this spring, and such unblemished crops we never before saw: we have no loss worth recording.

THE MANURE-HEAP.—Let us again advise the cottager to give his manure-heap a coating of soil at least once a month.

This, after all, is the most useful fixer of the ammonia, and within reach of everybody. Any loose soil will do.

And now let us again advise the holders of small plots to take heart and persevere. Industry is, perhaps, the most honest thing amongst the sons of men. Well directed it can scarcely fail. And here the cottager has an advantage over the farmer; the latter must pay others to do the labour; the allotment holder or cottager has it in his power to pay himself.

R. ERRINGTON.

APIARIAN'S CALENDAR—JUNE.

By J. H. Payne, Esq., Author of "The Bee-keeper's Guide."

By the time this paper meets the eye of our readers, the most busy and interesting month with Apianians will be nigh at hand; swarming in some localities will have commenced, and will be anxiously looked for in all; that is, where swarming is allowed, or wished to take place, and where it is not supers will be filling with honey.

ARTIFICIAL SWARMS.—The present is a good time for obtaining artificial swarms, and where "Taylor's Bar Hives" are used, the process is very simple, and may be thus effected:—From ten to twelve o'clock, on a bright morning, remove the board from the top of the parent hive; select a bar, the comb on which contains both eggs and brood, and if a royal cell all the better, but this is not important; place the bar with comb in some convenient place, so that it is neither bruised nor separated from the bar; then turn up the parent hive, after having fastened down the top, and placed the one intended for the new swarm upon it, observing that the junction is perfect; then, by a continuous gentle tapping upon the parent hive for a few minutes, a portion of the bees will have ascended into the empty hive; remove the parent hive 60 or 100 yards, placing it upon a fresh floor-board, and place the new hive exactly in the place of the old one, and upon the same floor-board; and, as quickly as possible, open it at top, and introduce the bar of comb filled with eggs and brood into its centre; replace the top, and endeavour to have the exterior of the hive as little altered in appearance as may be; it will then be found that the few bees driven into the new hive, with the number returning to it that were out at work, with some that may come from the parent hive, will altogether make a fair-sized swarm. The parent hive will, in all probability, give another swarm in about fourteen days.

QUEENLESS STOCKS.—It is not at all unusual at this season to see the bees of some hives, although possessing a good store of honey, quite inactive, carrying in no pollen, and basking in the sun at the mouth of the hive, but still giving smart resistance to a robber, if he ventures to make an entry: this arises from the old age or death of the queen; and, if the bees are numerous, will go on in the same manner nearly through the summer; but, if the numbers be few, robbers will attack them, and little or no resistance will be offered, but frequently the bees themselves will assist in carrying off the store to the pirates' home, where the queenless bees will meet with a ready welcome.

Remedy.—The best method to adopt, in such a case, is to introduce a piece of comb from a strong hive which contains both brood and eggs, and the bees will very soon make a queen, and ultimately do very well. In Taylor's bar-hive this process is very easily effected, by merely taking a bar of comb from one hive and introducing it into another, or a piece of comb with eggs and brood may be fixed in a bell-glass, and placed upon the queenless hive.

SWARMING.—From the dull and cold weather of March and April (and even of May thus far), many stocks are become weak and feeble, and numbers have entirely perished, therefore swarming, generally, must be later than usual; and those persons who are wishing to prevent it altogether must not be satisfied by simply placing boxes or glasses upon their stocks, but they must, also, see that the bees take possession of them, and the best method to secure this is not to put the supers on until the bees begin to be a little inconvenienced for want of room; and then, by placing a bit or two of *guide-comb*, as before directed, into the super, the bees will enter it at once and commence working.

I attended at a sale of bees in a village a few miles from Bury St. Edmunds, on the 6th of May, for a friend who was anxious to increase his apiary; there were sixteen stocks

announced in the catalogue, and, to my great regret, I found that ten out of the sixteen had very recently died, their owner having died a week or two ago, and feeding, in consequence, had been neglected. Half a dozen pounds of sugar in syrup, or barley sugar, distributed amongst them about the middle of April, would, in all probability, have saved them all; want of food was the cause of their death. But had I inquired of the villagers, who stood around me expressing to each other their astonishment at my fearless manner whilst examining them, *they* would, in all probability (at least some of them), have attributed their death to a very different cause, and have told me it was "*because the bees had not been put in mourning on the death of their master,*" no appearance of which was to be seen on any of the hives. It is by no means unusual to see a piece of black cloth or crape fixed to a row of beehives, and if the reason be asked, the reply is, "their master has lately died, and without this attention the *bees* would certainly have died also."

That much *has* already been done, must be acknowledged, and thankfully too, to improve the minds of the labouring population of our villages, by the establishment of schools, &c., but this *one* circumstance proves how much still *remains* to be done. Having this, and many other equally ridiculous prejudices to combat with, shews how very difficult it must have been to induce the cottager to forego his cruel and almost profitless manner of managing his bees, for one that is both humane and lucrative. I fear that from the cold easterly winds of the last few days, many persons will be surprised at finding their stocks dead that were apparently doing well a week ago; indeed, a clergyman told me only yesterday, the 12th of May, that he had lost three out of six during the last week; and if persons will not take the trouble to put a little barley-sugar into their weak hives (the easiest and safest of all methods of feeding), they *must*, in such a season as this, lose their bees.

THE YEARLY TRANSACTIONS OF THE HEN-YARD.

A PRACTICAL GUIDE FOR THOSE WHO MAY WISH TO KEEP A FEW FOWLS AND FIND THEM PROFITABLE.

JUNE.

I DO not know that I can better conclude the directions which are to guide my readers in the management of their fowls through the busy period of sitting, hatching, and rearing the young chickens, nor give them a better idea of the attention which I consider requisite to attain success, than by describing two days in my own poultry yard.

As soon as I am down in the morning I go out among my feathered favourites; the sun, we will suppose, shines warm and bright through the yet scarcely unfolded leaves, the yard looks clean and pleasant, and the grass of the orchard most invitingly fresh and green. On opening the hen-house door a deafening noise salutes the ear. All the young chickens of the stock, placed in captivity at night for safety, unite their voices in screaming for liberty, and are joined by the loud, impatient clucking of their mothers. Amid such a bewildering uproar, one feels at a loss where to bestow the attention so loudly demanded, and turning, perhaps, to the least urgent first, because they are the most quickly disposed of, I let out such of the old fowls as are not engaged either as mothers or sitters into the orchard, and throw them down their corn; next, brood by brood is silenced by mother and chicks getting their own way; the mothers are placed out under coops, and the little ones run and shake their tiny wings and twitter in the sunshine, not forgetting to pay due respect to the ample provision of oats, porridge, and boiled corn, which is placed either under each coop or close against it. A shallow pan of water for each little family must not be forgotten.

These noisy applicants thus quieted, I hasten to uncover the more patient incubators, notice that each eager feeder gets a good supply without molesting the young chickens, and returns to her nest in time to prevent her eggs becoming too cool. If they are ready to come off at once when they are uncovered, and return and make themselves comfortable by my usual breakfast hour, I consider this very good behaviour on their parts. In the meantime as the larder (in which I retain a slab for my own especial use) and also

the kitchen overlook the yard, spare minutes may be occupied in boiling corn and mixing porridge enough to last the rest of the day. Being thus provided with a store of food, the attention which the chickens require for the rest of the day will not occupy much time. The broods must be supplied with food every two hours at farthest, and each mother of healthy chickens will be benefitted by having her liberty for an hour or two's ramble in the course of the day. In very hot weather I put up the hens and chickens in the cool hen-house for an hour in the middle of the day, and I find this little siesta refreshes and strengthens the young things very much. When I think such stimulant advisable, I give each brood, at noon, a little bit of meat or boiled bullock's liver; about the middle of the day they have a feed of potatoes or rice, and before five are put to roost, each hen with her family in a large hamper with a lid. Then I know they are safe from cats and rats, from being pecked by other fowls before they are let out in the morning, and from soiling nests not intended for their use. In each hamper is placed a small basin of food for the chicks to eat early in the morning, for they are *very* early risers—I am not.

Thus glides a fine sun-shiny day. The chickens are contented, the mothers are pleased, and so are their owners. But, alas! every day, in England, is not fine and bright, as we have felt this spring especially; and a dull, wet day is a contrast to all I have been speaking of. The chickens look rough and discontented, the mothers are cross, and it is well if those who have the care of them are not so too. In drenching wet weather alone young chickens are really troublesome, especially if you happen to have several broods still unfledged. Means must be taken to keep them dry, and it is necessary to take care that the old hens do not vent their ill-humour (an attack of which they are sure to be troubled with) on each other's broods. At such a time a good warm hen-house is worth double its value, and an unused room, or the floor of a conservatory, are invaluable. If the coops are set down where hens are sitting, it is necessary to notice that the sitters are not disturbed by the noise of the chickens, and if they seem restless, to cover them over with a bit of cotton or muslin. The chickens are generally tired, or rather perhaps weary and discontented in weather like this, and are ready to go to bed about four o'clock, where those who attend to them are very glad to see them safely shut in.

Before concluding the subject of young chickens, I must say a few words on the dangers to which they are exposed. The chief of these I believe to be (my experience lies in the neighbourhood of London) rats, cats, and water. Rats may be guarded against by the use of good traps, by stopping their holes, by raising the nests off the ground, and by putting up the chickens in strong baskets at night; drowning may be prevented by removing all deep vessels of water, leaving the fowls no pans to drink from beyond two or three inches deep; but cats, those pests of the poultry yard, it is very difficult to provide against. They are as vigilant as they are mischievous, they are as watchful against surprise as they are ready to take advantage of the smallest opportunity. The trouble of my poultry was *doubled* last year, from trying to guard against their depredations, and yet both chickens and ducklings fell a sacrifice to their thievish practices. I know of no better remedy for this evil, than a good terrier and constant watching—a somewhat troublesome process the latter, it must be confessed.

And now, I believe, I have entered with sufficient particularity into the work of the hen-yard during the only portion of the year, when keeping a few fowls need really occupy much of the attention of those who take charge of them. As the young broods become fledged a time of leisure approaches, and I am anxious to avail myself of the space and leisure thus presented, to enter on a subject which I have long wished to introduce—a subject which becomes daily more interesting to me and, I have reason to think, to many of our readers also—I speak of Cochin China fowls.

Respecting a mill for crushing corn (which makes excellent food for young chickens), a correspondent signing himself H. L. K. has kindly furnished me with the following particulars, "It is a common, 'country made' mill for grinding Indian corn, its cost is 9s., and it may be had at

any export or emigrant's ironmonger's; it has an adjusting screw, by means of which it can be made to grind fine or coarse, and the corn for the chickens is crushed more coarsely as they get older."

DAILY WORK TO BE DONE.

The same as last month.

Good lime-washing should be repeated this month.

ANSTER BONN.

HORTICULTURAL SOCIETY'S SHOW.

CHISWICK, MAY 3RD.

STOVE ORCHIDS.

Of these there were eleven collections, including 134 plants, every one of which was creditable to its grower. We must include in our list all which deserved especial notice, appending such other remarks as our space permits.

- ACINETA BARKERII (Rollison), two expanded spikes.
 A. HUMOLDTII (Rollison), one expanded spike.
 ERIDES AFFINE ROSEA (Franklin), one spike, 18 inches long.
 Æ. CRISPUM (Veitch), four spikes.
 Æ. SUAVISSIMA (Mylam), a new and rare species, spike 15 inches.
 ARGOPHYLLUM (Williams), new species, sepals and petals deep rose; lip, rich purple.
 ANGULO CLOWESII (Iverson), a nice plant, with two large flowers.
 BLETIA TANKERVILLE (Kinghorn), more than 20 spikes.
 BURLINGTONIA FRAGRANS (Blake), one 8-flowered spike.
 B. RIGIDA (Rollison), rarely bloomed; eight spikes.
 CALANTHE VERATRIFOLIA (Blake), 15 spikes.
 CHRYSIS BRACDESCENS (Mylam), 22 flowers. (Blake), numerous flowers.
 CATTLEYA SKINNERII (Blake), nine spikes, one 8-flowered. (Carson), 12 spikes, highly coloured.
 C. INTERMEDIA PURPUREA (Williams), six spikes.
 C. MOSSIE (Franklin), well bloomed.
 CAMAROTIS PURPUREA (Carson), 4 ft. by 3 ft., finely bloomed.
 CYPRIPIEDUM BARBATUM (Blake), 17 perfect flowers. (Veitch), 17 flowers in perfection.
 C. LOWII (Williams), three flowers on a 2 ft. spike.
 CYTOTOCHILUM FILIPES (Woolley), with five long stems judiciously trained.
 DENDROBIUM NOBILE (Mylam), 5 ft. by 3 ft., thickly flowered. (Veitch), 3 ft. by 3 ft., a dense mass of bloom. (Rollison), largest specimen, 4 ft. by 4 ft., and full of bloom. (Franklin), 3 ft. by 3 ft., densely flowered. (Green), 3½ by 3½, with very stout flower stems.
 D. FIMBRIATUM (Mylam), 5 ft. by 3 ft. (Rollison), 13 spikes.
 D. DENSIFLORUM (Mylam), nine spikes. (Williams), 13 spikes.
 D. DEVONIANUM (Mylam), numerous flowers, trained to a trellis beautifully. (Williams), 6 spikes. (Veitch), so numerous flowers we could not count them, and larger flowered than we ever saw.
 D. AGGREGATUM (Mylam), a fine specimen.
 D. FARMERII (Williams), 13-flowered spike.
 D. WALLICHII (Williams), 3 ft. by 3 ft.
 D. MACROPHYLLA (Williams), nine spikes. (Carson), six spikes. (Kinghorn), seven spikes.
 D. PULCHELLA (Williams), 2½ ft. across, covered with flowers.
 D. MONILIFORME (Veitch), 2½ ft. by 2 ft., well flowered.
 D. PIERARDII LATIFOLIA (Veitch), numerous spikes, some 5 ft. long, yet covered with flowers; a remarkable specimen.
 D. TORTILE (Veitch), rare, with several spikes.
 D. CÆRULESCENS (Franklin), 2½ ft. by 2½ ft., well flowered.
 EPIDENDRUM BICOENATUM (Williams), rare, and rivalling the Phalænopsis.
 E. CRASSIFOLIUM (Carson), well bloomed.
 LEPTOTES BICOLOR (Mylam), many flowered.
 LYCASTE HARRISONII (Carson), 18 perfect flowers.
 ONCIDIUM BICOLOR (Mylam), noble flowers.
 O. PHYMATOCYLUM (Williams), two spikes, much branched.
 O. AMPHICATUM MAJOR (Williams), noble specimen, three large spikes. (Iverson), three spikes.
 O. BAUERII (Kinghorn), numerous spiked.
 O. LEUCHOCYLUM (Iverson), three spikes.
 PHALÆNOPSIS GRANDIFLORA (Blake), 25 large flowers. (Veitch), 18 flowers. (Franklin), 13 flowers. (Kinghorn), 16 flowers, best bloomed at the Show.
 P. AMABILIS (Veitch), with no less than 30 flowers. (Franklin), 22 fully expanded flowers. (Blake), 25 large flowers.
 PHAIUS WALLICHII (Blake), six noble spikes. (Williams), eight spikes.
 SCHOMBURGKIA VIOLACEA (Mylam), had twelve flowers on a 6-ft. spike.
 SACCOLABUM GUTTATUM (Blake), one spike, 12 inches long. (Franklin), two long spikes.
 TRICHOPIA TORTILIS (Blake), numerous flowered.
 VANDA SUAVIS (Mylam), spike of 10 flowers. (Veitch), true species, two 12-flowered spikes.
 V. TRICOLOR (Mylam), six spikes of flowers. (Blake), pale variety, two good spikes.
 V. CRISTATA (Mylam), rare, 22 flowers.

Mr. Mylam, gardener to J. Rucker, Esq., Wandsworth, took the first prize (£15) for the best collection of 20. Mr. Blake, gardener to J. H. Schroeder, Esq., Stratford, took the second prize (£10) for the next best 20, and for the next best 20, Mr. Williams, gardener to C. B. Warner, Esq., Hoddesden, received the third prize (£7). Among the

Nurserymen, Messrs. Veitch, Exeter, received the first prize (£7) for the best collection of 15; and Messrs. Rollison, Tooting, the second prize (£4). For collections of 10, Mr. Franklin, gardener to Mrs. Lawrence, Ealing Park, received the first prize (£7), and Mr. Carson, gardener to W. F. G. Farmer, Esq., Nonsuch Park, the second prize (£4). For collections of 6, Mr. Kinghorn, gardener to Earl Kilmorey, Twickenham, had the first prize (£4); Mr. Green, gardener to Sir E. Antrobus, Bart., Cheam, the second prize (£2 10s.); Mr. Woolley, gardener to H. B. Kerr, Esq., Cheshunt, the third (£1 15s.); and Mr. Iverson, gardener to the Dowager Duchess of Northumberland, the fourth (£1 5s.).

STOVE AND GREENHOUSE PLANTS.

There were 14 collections of these, comprising 164 plants, all of considerable merit, and the greater part of surpassing excellence. Among them the following were most conspicuous.

- ADENANDRA SPECIOSA (Frazer), a good plant. (Taylor), 4 ft. by 4 ft. (Croxford), 2½ ft. by 3 ft.
 ÆSCHYNANTHUS BOSCHIANUS (Green), 2½ ft. by 2 ft., well bloomed.
 Æ. SPECIOSUS (Dodds), neat, 10 heads of flowers.
 APHELEXIS MACRANTHA PURPUREA (Green), 2½ ft. by 2½ ft., handsome.
 A. SESAMOIDES MAJOR (Stewart), 3 ft. by 2½ ft., seldom seen.
 A. SPLENDIDISSIMA (Williams), beautiful, and tastefully trained.
 A. HUMILE (Kinghorn), 3 ft. by 3 ft., well flowered.
 AZALEA INDICA var. MURRAYANA (Cole), 2½ ft. by 3 ft., covered completely with blossom.
 A. INDICA var. GEM (Carson), 3 ft. by 3 ft., well bloomed.
 A. INDICA LATERITIA (Dodds), 3 ft. by 2½ ft., well bloomed.
 A. INDICA var. PRESTANTISSIMA (Hamp), 4 ft. by 2 ft., very fine.
 A. INDICA ALBA (Williams), 8 ft. by 4 ft., splendidly bloomed.
 A. INDICA var. PRINCE ALBERT (Williams), 3 ft. by 2 ft., rosy red flowers.
 A. INDICA var. OPTIMA (Kinghorn), 5 ft. by 2½ ft., richly bloomed.
 A. VARIEGATA (Green), 4 ft. by 3 ft., densely flowered.
 A. DECORA (Green), 3 ft. by 3 ft.
 BORONIA SERRULATA (May), 2 ft. by 3 ft., perfect specimen. (Frazer), 2 ft. by 2 ft., well bloomed. (Dodds), 2½ ft. by 2½ ft., handsome.
 B. PINNATA (Frazer), 2 ft. by 2 ft., well bloomed. (Green), 2 ft. by 2 ft. (Dodds), 2½ ft. by 2½ ft., handsome.
 B. ANEMONIFOLIA (Carson), 2½ ft. by 2½ ft., finely bloomed.
 CLEODENDRUM SPLENDENS (Cole), balloon trellised, well bloomed.
 C. FALLAX (Speed), with 12 panicles of splendid flowers.
 CHOROZEMA LAWRENCIANA (Frazer), 3 ft. by 3 ft., well bloomed. (Croxford), 4 ft. by 3 ft.
 C. HENCHMANNII (Frazer), 3 ft. by 2 ft., well bloomed.
 C. VARIUM NANA (Frazer), 3 ft. by 2 ft., well bloomed.
 CYTISUS LATIFOLIA (Williams), 3½ ft. by 2½ ft., finely bloomed.
 DILWYNIA JUNIPERINA (Pamplin), 5 ft. by 3 ft.
 DAVIESIA LATIFOLIA (Stewart), good plant, scarcely in bloom.
 EPACRIS GRANDIFLORA (May), an immense plant, 8 ft. by 8 ft. (Croxford), 5 ft. by 5 ft., finely bloomed. (Over), 3 ft. by 4 ft. (Stanley), 3 ft. by 3 ft., good plant.
 E. PULCHELLA (Over), 2 ft. by 1½ ft., an old species, well grown.
 E. MINIATA (Kinghorn), 3 ft. by 3 ft.
 ERIOSTEMON CUSPIDATUM RUBRUM (May), new variety, 8 ft. by 6 ft., full of bloom.
 E. BUXIFOLIUM (Hamp), 3 ft. by 3 ft.
 ERICA INTERMEDIUM (May), 5 ft. by 5 ft., well bloomed. (Speed), 3 ft. by 3 ft., well bloomed.
 E. VESTITA ALBA (May), 5 ft. by 5 ft., very good.
 E. GRANDINOSA (Pamplin), 5 ft. by 3 ft.
 E. PUBESCENS MINOR (Pamplin), 2½ ft. by 1½ ft.
 E. PERSOLUTA ALBA (Pamplin), 3 ft. by 2½ ft.
 E. PROPENDENS (Taylor), 1½ ft. by 2 ft., well flowered. (Croxford), 2½ ft. by 2½ ft., thickly bloomed.
 E. TROSSULA (Stewart), 4 ft. by 4 ft., covered with bloom.
 E. SINDRIANA (Stewart), 2½ ft. by 2½ ft.
 FRANCISCEA ACUMINATA (Cole), 2½ ft. by 3 ft.
 F. LATIFOLIA (Carson), 2½ ft. by 2 ft., neat though usually straggling.
 HOVEA CELSII (May), difficult to get into form, but this well regulated and full of flower. (Cole), 3 ft. by 2 ft., well managed. (Pamplin), a nice plant.
 HOYA IMPERIALIS (Cole), 8 ft. by 5 ft., with eight heads of flowers.
 H. CAMPANULATA (Over), well bloomed and trained.
 IXORA JAVANICA (May), rather new, 3½ ft. by 3 ft., with full 100 heads of flowers.
 I. COCCINEA (Cole), 3½ ft. by 2½ ft., numerous flowered. (Green), 3½ ft. by 2½ ft., flowers numerous and large.
 LESCHENAUZIA FORMOSA (Green), 2½ ft. by 2 ft., densely flowered. (Taylor), 2 ft. by 3 ft. (Carson), a pretty specimen. (Speed), 2 ft. by 2½ ft. (Kinghorn), 2½ ft. by 2½ ft.
 L. BILOBA SUPERBA (Green), thin, yet well bloomed.
 OXYLOBUM PULTENÆ (Carson), 3 ft. by 3 ft.
 PODOLOBIUM STAUROPHYLLUM (May), densely bloomed, 7 ft. by 5 ft.
 P. CHOROZEMÆFOLIUM (May), 3 ft. by 3 ft., very fine.
 PULTENÆA STIPULACEA (May), another plant difficult to regulate, but here in good form; scarcely in bloom.
 PIMELEA SPECTABILIS (Pamplin), 3 ft. by 3 ft. (Taylor), 3 ft. by 3 ft., good condition. (Croxford), 2 ft. by 2 ft., large flowered. (Stewart), 4 ft. by 4 ft.
 P. LANATA (Pamplin), in good condition, 3 ft. by 3 ft.; a plant seldom seen.
 P. HENDERSONII (Croxford), 2½ ft. by 2½ ft., well grown. (Speed), 2 ft. by 2 ft., nice healthy plant. (Williams), 3 ft. by 3 ft.
 POLYGALA OPPOSITIFOLIA (Taylor), large and well bloomed.
 P. CORDIFOLIA (Taylor), 3 ft. by 2½ ft.

TETRAEUCHA VERTICILLATA (Speed), 3 ft. by 3 ft., well grown, but day too dull to open the flowers.

TROPEOLUM JARRATTII (Williams), thickly bloomed, on flat trellis.

VINCA ROSEA (Speed), 2½ ft. by 2½ ft., covered with flowers.

ZICHYA PEDUNCULATA (Over), neatly trained and well bloomed.

Z. LONGIPEDUNCULATA (Stewart), particularly well bloomed.

Z. INOPHYLLA FLORIBUNDA (Stanley), good plant of one of the best of greenhouse creepers, either to train to a pillar or trellis.

Mr. May, gardener to Mrs. Lawrence, Ealing Park, took first prize for 20 specimens; Mr. Cole, gardener to H. Collyer, Esq., had the second; Messrs. Frazer, nurserymen, Lea Bridge-road, had the third; and Messrs. Pamplin, of Lea Bridge-road, had the fourth.

For 15 specimens, Mr. Green, gardener to Sir E. Antrobus, Bart., Cheam, had the first prize; and Mr. Taylor, gardener to J. Costar, Esq., Streatham, the second.

For 10 Specimens, Mr. Carson, gardener to W. F. G. Farmer, Esq., had the first prize; Mr. Speed, of Edmonton, the second; Mr. Croxford, gardener to H. H. Barnes, Esq., and Mr. Williams, gardener to C. B. Warner, Esq., being equal, had each third prizes; Mr. Stewart, gardener to T. Tredwell, Esq., Norwood, the fourth; Mr. Dodds, gardener to Sir J. Cathcart, Bart, Coopers Hill, the fifth; and Mr. Over, gardener to W. Mullen, Esq., Clapham, the sixth. We are constrained to say, as public journalists, that we think Mr. Speed's collection in this class ought to have had the first prize.

For 6 specimens, Mr. Kinghorn, gardener to Earl Kilmorey, had the first prize; Mr. Hamp, gardener to J. Thorn, Esq., South Lambeth, the second; Mr. Stewart, gardener to W. Huggins, Esq., the third; and Mr. Stanley, gardener to H. Berens, Esq., Sidcup, the fourth.

CAPE HEATHS.

There were thirteen collections of ten plants each, and the 130 thus congregated, were, we think, the finest show of Heaths ever exhibited. Among them were:—

<i>Erica aristata</i> major.	<i>Erica Sinderiana</i> .
— <i>Andromædifolia</i> .	— <i>suaveolens</i> .
— <i>Beaumontii</i> .	— <i>Templea</i> .
— <i>elegans</i> .	— <i>tortiflora</i> .
— <i>fastigiata lutescens</i> .	— <i>triumphans</i> .
— <i>grandinosa</i> .	— <i>ventricosa coccinea minor</i> .
— <i>mundula</i> .	— <i>vestita rosea</i> .
— <i>mutabilis</i> .	— <i>vasiflora</i> .
— <i>mirabilis</i> .	— <i>viride</i> .
— <i>propendens</i> .	— <i>Webbiana</i> .
— <i>Sprengelii</i> .	

Amateur Class.—First prize to Mr. Smith, gardener to W. Quilter, Esq., Norwood. Second prize to Mr. Cole, gardener to H. Collyer, Esq.

Nurserymen.—First prize, Messrs. Rollison, Tooting. Second prize, Mr. Epps, Maidstone. Third prize, Messrs. Fairbairn, Clapham.

Amateurs.—Heaths in 11-inch pots. First prize, Mr. Smith, above-mentioned. Second prize, Mr. Over. Third prize, Mr. Rozer, gardener to J. Bradbury, Esq.

Nurserymen.—Heaths in 11-inch pots. First prize, Messrs. Rollison. Second prize, Mr. Epps.

Amateurs.—Heaths in 8-inch pots. First prize, Mr. Smith. Second prize, Mr. Taylor.

AZALEA INDICAS.

Of these, the most striking objects at the May Exhibitions, there were four collections, including 36 plants, and never were any produced in higher condition, or more splendidly bloomed. Among them were—

CORONATA (Green), 3 ft. by 2 ft., exquisitely bloomed; (May), 5 ft. by 5 ft. *EXQUISITA* (Green), 5 ft. by 5 ft. *FIELDERII* (Frazer), 5 ft. by 5 ft., fine white. *GLESTANESIA* (Green), 4 ft. by 4 ft.; (Carson), 4 ft. by 4 ft. *LATERITIA* (Green), 5 ft. by 5 ft.; (May), 4 ft. by 4 ft.; (Carson), 3 ft. by 2½ ft. *LAWRENCIANA* (May), 6 ft. by 6 ft., splendid plant, covered with bloom. *OPTIMUS* (Green), 5 ft. by 4 ft. *PRESTANTISSIMA* (May), 4 ft. by 4 ft. *PULCHRA* (Carson), 3 ft. by 3 ft. *RAWSONI* (Green), 4 ft. by 4 ft.; (May), 5 ft. by 4 ft. *RUBRA PLENO* (Carson), 3 ft. by 2½ ft. *ROSEA SUPERBA* (May), 5 ft. by 4 ft. *SMITH'S COCCINEA* (Frazer), 6 ft. by 4 ft. *SPECIOSISSIMA* (May), 6 ft. by 5 ft.; (Carson), 4 ft. by 4 ft. *SINENSE* (May), 4½ ft. by 3 ft., a noble plant. *SPLENDENS* (Frazer), 5 ft. by 5 ft. *TRIUMPHANS* (Green), 6 ft. by 4 ft. *VARIEGATA* (Green), 5 ft. by 5 ft.; (May), 5 ft. by 5 ft. *VIOLACEA SUPERBA* (Frazer), 5 ft. by 4½ ft.

For 12 varieties, Mr. Green had the first prize, and Mr. May the second.

For 6 varieties, Mr. Carson had the first prize, and Messrs. Frazer the second.

NEW PLANTS.

First prize, Messrs. Veitch, for *CANTUA DEPENDENS*, a beautiful Patagonian shrub, said to be hardy. The flowers trumpet-shaped, about four inches long, of a bright rosy crimson colour. Second prize, Mr. Baumann, a continental nurseryman, for *DEUTZIA ELEGANS*, a dwarf, handsome, hardy shrub, with white flowers, something like the well-known *Deutzia scabra*. Third prize to Messrs. Loddiges—an *AERIDES*, a fine species allied to *Aerides Larpentæ*. The spikes were long, and thickly bloomed; the flowers large, pale pink, striped with red. Fourth prize to Messrs. Henderson and Co., Pine-apple-place, for a new *Orchid* from St. Domingo. The habit of this new plant is that of a *Broughtonia*, but the flower is that of a *Burlingtonia*. Sepals and petals rosy lilac; lip large, boat-shaped, rosy lilac, striped with pink. They are produced on upright stems 1½ ft. high, in thickly bloomed racemes. Fourth prize to Mr. Cole, for *Allamanda nerifolia*, a stove shrub with bunches of yellow tubular flowers. A very useful plant. Fifth prize to Mr. Carson, for *Trichopilia coccinea*, a new and handsome species, with the sepals and petals greenish brown, and barred with brownish purple; the lip is large, and of a deep rosy red. Sixth prize to Mr. May, for a pretty new plant, *Pimelea Nippergiana*, of a good habit, with heads of clear white smooth flowers. Seventh prize to Messrs. Loddiges, of Hackney, for a new *Lycaste*, rather handsome. Eighth prize to Mr. Franklin, for a new *Epidendrum* of considerable beauty.

There were various prizes awarded for *Rhododendrons*, *Tall Cacti*, and *superior specimens*, but none requiring particular notice.

We will notice the *Florists' Flowers* next week.

HARDY HERBACEOUS PLANTS.

PANCRATIUM ILLYRICUM (Illyrian P.). This beautiful, hardy, bulbous plant deserves a place in every flower-garden. Its bulbs are large, of an oval shape, and the plant grows very compact, and rises from ten to fourteen inches in height. It flowers very freely, and any rich garden soil suits it well. It flowers and seeds itself about in any situation in this garden. I have even lifted large bunches of it into pot when in full bloom, for exhibition, without any injury to the plants flowering the next season. This is one reason for my keeping several of my favourite pets in various situations, that is, both in cool and open warm borders, for the purpose of early or late bloom. The beautiful white flowers come forth in May or early in June.

PANCRATIUM MARITIMUM (Seaside P.). This also is a free bloomer, flowering in May and June. It grows from one foot to one foot and a half high. Its leaves are much more glaucous than those of the preceding species, and are blunt pointed. They are both very desirable hardy border plants.

SCILLA PERUVIANA (Peruvian Squill). This beautiful, deep blue, freely-blooming Squill, every one should have in their flower borders. Any rich soil suits it. Its beautiful, large, pyramidal corymb of flowers rises from nine inches to a foot high, and continues in bloom some time. I have lifted large bunches of this into pots for the exhibitions, with from eight to twelve flower-stems upon it, without injury to the plant. It is nearly the only bulbous plant that we allow to stand as a permanent plant in our arrangements, and a noble front plant it makes, as its leaves are visible above ground nearly all the year. We plant nearly all bulbous plants, according to their heights, as intermediates among our choice hardy flowers, on account of their short duration of leaf and stem above ground. What I mean by intermediates is, that our principal and choice hardy herbaceous plants are all arranged according to their height and colour of flower, or size or width of bed to be filled (of course keeping all the tallest plants in the back ground), from two feet and a half to three feet and a half apart in the rows, and these are all kept labelled. By this method, we know where and what we have at any time. Ample space is thus allowed for either bulbs, annuals, or any other kind of bedding-out plants; but wherever a bulb is planted, a label is put down with it, even if it is a small bulb in a pot, and the pot sunk in the earth,—a practice we adopt largely, and find it an excellent plan for small bulbs. We sink the pots in the borders to an inch and a half above the rim of the pot, so that any surface earth-stirring, and the like, never leaves the pots visible to the eye, moreover, the pot and plant are the more secure from frosty weather. In our ornamental and mixed arrangements, we make it a rule to label all the plants, except snowdrops, crocuses, annuals, or other bedding-out plants, which we keep to fill up vacancies. Our bulbous intermediates are dotted about at equal distances, and varied according to kind and colour. As I said before, this large and beautiful

Peruvian Squill is the only bulbous plant that has a place as a principal plant in our arrangement. Of this, there is another variety, called *Peruviana discolor*, or the dingy-flowered Squill, the same as the latter in every respect except that of colour. Both flower in May.

S. PRÆCOX (Early Squill). This plant grows from four to five inches high; colour deep blue. It is one of the most important plants that a garden can possess, on account of its real beauty, and the early season in which it flowers. It is as hardy as the commonest crocus, and is in flower at the same time, early in March. It should be kept in pots, as it is too valuable to have even a bulb of it forked out of its place by an inexperienced person happening to be dressing off the borders. We have no plant its equal, in point of beauty, to flower in the open border at that season of the year. If a pot of it stands in bloom in the conservatory, even amongst so many other beauties it is sure to strike the eye of every visitor. Four or five bulbs may be planted in a six-inch pot, and notwithstanding it will flourish in any rich soil, yet turfy loam, a little peat, and leaf-mould, should be used in the case of potting; and when potted and plunged in its proper place in the border, it may remain four or five years without being disturbed.

S. BIFOLIA (Two-leaved Squill) is the next kind in point of beauty. It is included in our English Flora, but I do not know where it is to be found in a wild state. It is a little early flowerer, earlier of the two than the last mentioned species, and grows from three to four inches high; colour deep blue; not quite so many flowered, but should be treated in every respect the same as the *S. præcox*.

S. ITALICA (Italian Squill) grows from six to nine inches high; colour blue, and being a stronger grower, may be kept in pot or otherwise. Flowers in April and May.

S. LUSITANICA (Spanish Squill) is from four to six inches high; colour light blue, and is a very neat little plant. It may be kept in a pot, or in the border. It flowers in April and May.

S. CAMPANULATA (Bell-flowered Squill).—This, I think, is the most common of all the Squills, and a very cheerful, free-blooming plant it is. This good-natured plant will flower in almost any place, whether among trees or bushes, and be the soil rich or poor. It rises from nine inches to a foot high; colour blue, and flowers in May. There are two varieties of this species, the pink and the white, both of which are very pretty, and will do in a pot or otherwise.

Having mentioned some of the most beautiful of the Squills, and turning to the *Fritillaria*, I shall first make mention of our own native species, which is not only an early flowering plant, but one of the prettiest of the whole family of the dwarf kinds, and flowers in April or May, and does exceedingly well if planted in six-inch pots in turfy loam and a little leaf-mould, and plunged deep in its proper places in the border, where it will increase itself, and may remain for some years, until the pot appears to be full, when it may be taken up and divided and repotted. The best time to take up and divide any bulbous plant is when the leaves and stems have died down naturally.

This interesting plant is called *FRITILLARIA MELEAGRIS* (Fritillary, Chequered Daffodil, Guinea-hen Flower, or Snakeshead). It rises from nine inches to a foot high. There is a white variety of this flower. Many others might be here mentioned of dwarf kinds, such as *nigra*, *pyrenaica*, *obliqua*, &c., all of which we keep in pots, and are rewarded by them every spring with a neat compact bunch of flowers.

The largest of this family is the Red and Yellow Crown Imperial, or *FRITILLARIA IMPERIALIS*. This is too large for pot culture. It delights in good, rich soil, and rises from two and a half to three feet in height, flowering in April and May, and a noble looking plant it is, particularly the yellow variety. These plants will flower well in the same spots for three or four years successively, after which they should be taken up and their place exchanged with some other plant. This we prefer doing as soon as the plants die down naturally, first making their new situation rich and good, and planting immediately. Most bulbs do best when kept in the ground all the year.

The little *ERANTHIS HYEMALIS* (Winter Aconite) is one of the earliest welcome spring flowers, and although it is not much of a flower for nosegays, its bright yellow flowers and earliness make it acceptable, and it is ornamental when the

roots are kept snug together, so as to form neat, little, compact bunches near the edges of the flower-borders. I never have tried this plant in a pot, but no doubt it would do exceedingly well if potted in six-inch pots, and a nice way it would be of keeping the tubers together. T. WEAVER.

HENS AND CHICKENS.

HAVING given much attention to my poultry yard for the last few years, and having tried a great many schemes for the management of hens more particularly, I beg to offer a few remarks on the way which I have found most successful.

Our situation is very bad, being a cold, wet, clay soil, and what is worse, we are overrun with *rats*, which, do all we can, we cannot keep away. We have lost, I may say, dozens of goslings by them this spring, yet we have caught as many as ten rats in a trap at one time, and I am sure we should be most thankful to any correspondent of *THE COTTAGE GARDENER*, who could inform us of an *effectual* way of getting rid of them; we have tried traps, cats, of which we have three, who catch a good many, and I do not know how many kinds of poison. But all to no avail, for there the vermin are, perhaps not quite so numerous as ever, but quite as audacious.

But to return to my subject. When first our hens arrived their eggs were all that could be desired, but gradually the shells got thinner and thinner, until after a year or two we often had eggs laid actually *without shells*. Well, we set ourselves thinking how we could prevent this, and at last we obtained some *chalk*, which we broke up and mixed *with the corn*, and put in their water, and so eager were the hens after it, that they would often peck and eat the pieces of chalk before they touched their corn. This practice we have continued ever since, and find that it not only strengthens the shell of the egg, but has a beneficial effect on the health of the poultry generally.

With respect to *feeding*.—They are let out, generally, about half-past eight in the morning in summer, and a little later in winter, and are fed directly on being let out with barley mixed with the chalk, as before-mentioned, sometimes they have a little boiled rice given them warm, and occasionally a little boiled Indian corn. About two o'clock in summer, and at one in winter we give them a second meal of barley, for which they come home as regularly as possible, then gradually go into roost, and are all in by six, when they are shut up for the night. Many advocate letting them out sooner in the morning, saying, that they then get the worms, grubs, &c., which the dew of the previous night has called out from their hiding places. But against this I have two objections—the first is, we like them to have a good foundation of corn first thing in the morning; and the second is, that we always found that by letting them out so early it was a temptation to lay their eggs astray, but that by keeping them in they became much more *regular*, and seldom layed elsewhere than in their proper place.

With respect to *houses and nests*.—I would only remark that we do not use any artificial warmth or anything of the kind; we allow a little light through a small window; and that the *perches* are arranged like two ladders with their feet touching, and the upper ends leaning against the opposite sides of the house, which is decidedly the best plan. The nests are simply open boxes of wood turned on their sides and arranged in a line, taking care so to place them that you need not *pass under* the perches to get at them, and putting them close to the wall so that the rats cannot get up behind.

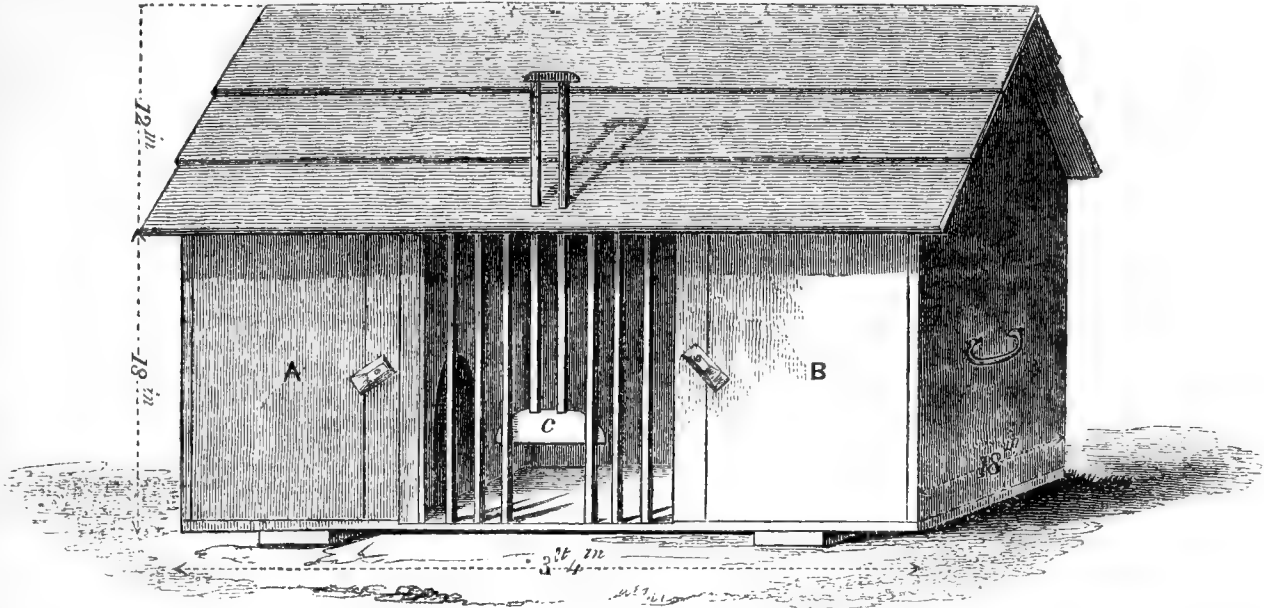
When a hen makes up her mind to sit, we allow her to do so for a day or two before the eggs are given her, and when they are given we place a piece of trellis work in front of the nest, which is removed every morning for about half an hour to allow the hen to come off and feed, &c. The use of the trellis work is to keep the other hens from teasing and laying in the same nest as the sitting hen, which they will otherwise often do.

With respect to the *rearing of chickens*.—As soon as all the eggs are hatched, the hen and chickens are put in their coops and kept in an old barn. The chickens being able to run about after a day or two, when fine—the coops are lifted out into the yard in the morning, and taken back again in the evening in wet or cold weather, but in fine weather left

out all night. As to food for the chickens—they have ground barley, sometimes a little boiled rice, or dog biscuit soaked in water, and little pieces of cooked meat from off the dinner plates which are cut into small pieces. It is a rule with us never to give them anything which will either *swell* in their crops, or which is likely to turn sour: the chickens never thrived when fed on groats. We have now two broods hatched, February 23rd, which would be considered by many ready for the table; we shall consider them so in two

or three weeks more. They are as large as a good sized partridge. There are also several other broods of a month and six weeks old, equally thriving, altogether about forty (not including those which have died from accidents &c.); when fed on groats we never reared as many in the course of the summer.

With respect to *coops*.—I cannot forbear giving you a sketch of one, which after trying all sorts we consider decidedly the best. The advantage of this coop is that the



Part A, is divided off from the rest of the coop by a partition, with a hole large enough for the hen to come in and out at pleasure. Part B, is not divided off, and is only to put the food behind.

hen can in rainy weather go into her sleeping house, A, where she is effectually sheltered from the weather, and the food for her and her chickens can be placed behind the door, B (which is made to open and shut), and the other fowls cannot get at it, which is the case in other coops; but the coop can thus be left standing in the poultry-yard with the other fowls. Besides, the second door, B, is used in cleaning the coop out. There is also a piece of wood which

fits to the wire bars in front and reaches three-parts of the way up, so that at night when it is put up, the hen is securely shut in, and sufficient space left for ventilation. Another advantage in this coop is, that if suddenly a shower comes on, you can without the least trouble drive the chickens in, push down the two sliding wires, C, and the chickens are in all safe with plenty of room to run about;—the shower over, the bars are pulled up.

W. H. W.

TO CORRESPONDENTS.

BARLEY-SUGAR FOR BEES.—A Reader writes to us thus:—"If I may be permitted to volunteer a word in reply to your querist B. B., I would say, that what he terms "prepared barley-sugar" for feeding bees, is merely barley-sugar *unflavoured* with lemon peel; the mode of making it being described in Taylor's *Bee-keeper's Manual*. Where a little trouble is not minded, the cost is that of refined sugar. If bought at the shops, it is dearer, and not so good. B. B.'s plan of uniting weak stocks of bees in autumn is excellent practice, and ought to be universal. Not a bee need be lost, and brimstone may be utterly discarded; but I always prefer a puff or two from the mouth (with an Oxford tube) to using bellows. As regards fumigating material, what is termed by B. B. "Neighbour's prepared fungus," is the *Mouse-skin Byssus*, or *Racodium Cellare*, which your correspondent will find described by Mr. Taylor, who says truly that in some of the wine and beer vaults in London, enough may be had to serve a whole county, or, indeed, a dozen counties."

PEACH-TREES FAILING (I. D., *Saltwood*).—Rely upon it, yours is simply a case of immaturity in the wood, such ever presents a similar appearance. There certainly seems little objectionable in your border; but trees that are in the common acceptance "the admiration of every one" when in a young state, but too often flatter to betray. If your trees begin to grow luxuriantly shortly, let a trench be dug out about four or five feet from the wall, and parallel with it, and let every root be cut which projects beyond that line, even to the very bottom. If you do not cut *now*, be sure to root-prune less or more in the middle of September, for to do so earlier would prejudice the fruit. Moreover, we would stop every shoot of any strength in the end of July. Pray look over Mr. Errington's papers for root-management.

CENOTHERA MACROCARPA (*Sabrina*).—Now is the best time to make cuttings of this. Slip off young shoots when they are three inches long, and put them under a hand-glass in a shaded place. *C. taraxifolia* comes best from seeds, or by dividing the roots in the spring. Cuttings of *Double Gorse*, or *Furze*, will easily root in a sheltered situation, or under a hand-glass, if put in about the end of July to the end of September. April is the best time to transplant them; but any time from October to May will do. Seedlings of *Sparaxis* and *Gilias* should not be disturbed at all the first season. In October, shake them out of the old soil, and put them round a six-inch pot, one inch apart, for the second season's growth, after that, put them singly in pots, or three or four in a pot.

SIPHOCAMPYLOS MICROSTOMA (J. W. T.).—It should be cut down late in the autumn, or early in the spring, and be allowed to flower only on annual shoots. The seeds of your half-hardies could not be good, or they would vegetate under your frame. The annual *Larkspurs* you mention take about a month to come up in the open ground when sown in April, but only three weeks, and not so much, if sown in May.

CALCEOLARIA SEED (*G. Allis*).—Sow it immediately in light, rich sandy soil; make the surface smooth but not hard; scatter the seed rather thinly upon it, and cover it with the thinnest possible layer of finely-sifted compost. Give a gentle watering with a fine-rosed put, and place it on a shelf in a greenhouse well shaded, or, what is better, in a cold frame close to the glass. Shade from sun, and water occasionally. As soon as the plants can be handled, prick them out into the same compost, set about an inch apart; and as soon as the leaves touch each other, pot them singly into small pots, replacing them in the cold frame; repot again as soon as necessary, and, finally, by the time winter has set in, have them in five-inch pots, placed upon a shelf, in a light, airy greenhouse, where they might remain till spring; then repot them, giving more water, and allow them to flower to prove them; bad ones throw away, and good or promising ones keep and propagate by cuttings.

DOG'S-TOOTH VIOLETS (*Ibid*).—These must be planted the last week in September. Their roots are impatient of drought. You must plant them in pots, placed in the shade, out of doors; and as soon as your autumn flowers are destroyed, then turn them out of the pots, and no doubt they will flower well in the spring.

CUT FLOWERS (*Ibid*).—The best way to send cut seedlings of plants, is to damp some moss, spread a thin layer over it, at the bottom of a tin box; then lay your specimens upon it, wrapped in silver paper; cover it with another layer of moss, and then put on the lid; wrap the box in strong white paper, tie it with some string, and seal with wax, and send it by the same day's post. Your specimen will then arrive fresh, and can be examined, and probably named, with pleasure.

THINNING ANEMONES (*F. H.*).—Your anemone bed sown last June has done well, but the flowers are small. It is owing to two things—the plants are too thick, and the ground is too poor. Trench a bed deep, and enrich it with good well-decayed dung. Thin out the plants, and put them in the new bed four inches apart; they will flower well next year, or, if fine, this autumn. *Azalea cuttings* do not require more heat than a cucumber bed. The cuttings should not exceed three inches in length; two inches will be sufficient.

GLOXINIAS AND ACHIMENES (*J. B. H.*).—You have a small greenhouse, a frame, and a hotbed, and you wish to know if with these you can grow gloxinias and achimenes? Yes, and well too. The lowest temperature the above plants will bear at night is about 48° to 50°. You may syringe them in the frame early in the morning in fine warm weather, and, when it is very hot out of doors, you should give plenty of air in the morning, syringe in the afternoon, and cover up early. When your plants are large enough, and the summer is fairly come, remove your gloxinias and achimenes by degrees into the greenhouse, shading for a time till they get over the change, and are strong enough to bear the full sun and light. Take care of the gas. It is a good servant, but an exterminating master.

BEES (J. B. W.).—If you have rose bushes, espalier trees, or even gooseberry bushes, in your "small garden," you need not entertain any fears about losing your bees at swarming time; but if you wish to prevent it altogether, cut a hole four inches in diameter in the top of the hive they are in, and place upon it a box or small hive; do this at noon, upon a clear day.

ZEPHYRANTHES (F. H.).—There is no such name as *Zephyranthes grandiflora* used now. That name was given in the Botanical Register on wrong data; and the author of it, Dr. Lindley, cancelled it soon after. *Carinata* is the right name; and if the bulbs are of a flowering size, the four will bloom very well in one pot. It requires perfect rest in winter, and to be grown in light sandy loam. It is a beautiful Mexican bulb, with rose-coloured flowers. Keep it growing to the end of September, then let it dry for the winter. Single plants of *Saponaria calabrica* are meant to stand nine inches apart; but if they, or *Lobelia ramosa*, are very small, let three of them out of a small pot stand for one plant, at the same distance.

OXALIS FLORIBUNDA (A Constant Reader).—It is quite different from *Oxalis Bowiana*. It has a root like a carrot, and an evergreen top, and is perfectly hardy except in wet soil. It will make a most beautiful bed nevertheless, if your soil suits it; but the best way to use it is as an edging to a bed of choice mixtures from the greenhouse. The colour is a deep rose, and the height not six inches quite.

CAPSIUM FUMIGATION (Ibid).—This being quite a new practice, you will be as likely to find out the quantity for a given hose as any one else. All of us have to learn.

YELLOW AND RED BRUGMANSIAS (Ibid).—These are sold at most of the London and large country nurseries; but we never mention names. *Datura* is the right family or generic name of all the Brugmansias, the old white one among the rest. Brugmansia is a later name, and, therefore, only a synonyme; but all the nurserymen understand this, and you can have them by either name.

BEE HOUSE (An Unfortunate Bee-keeper).—There appears to be no objection whatever to your covers for bee boxes; they are very substantial, and probably very effective in keeping out wet, which is the chief object. You must have an opening at the top for ventilation, or the heat between the box and cover will be ruinous, especially if they are painted green. Stone-colour is best. The entrance hole, "4 inches long and $\frac{1}{2}$ inch deep," is quite large enough for all ordinary purposes. Its size will not prevent swarming; that can be done only by giving room judiciously, and ventilating at the top of the boxes. No hive, be it ever so large, should have more than one entrance. In hot weather keep the doors at the back of your covers wide open. But, after all, Nutt's principle is bad altogether: convert your Nutt's boxes into Taylor's bar-hives when opportunity offers. In page 75 of the *English Bee-keeper*, just published, the writer says, and very truly, "It is universally allowed that Mr. Nutt's hives have proved a signal failure wherever located in the open air."

NAMES OF PLANTS (A Constant Reader, Derbyshire). Your plant is *Arabis Alpina*, or Alpine Wall-cress. It is very different from the Sweet Alyssum (*A. maritimum*) recommended by Mr. Beaton. The seed of the Alyssum, being an annual, may be bought at any large florist's shop. (Robert Harrison).—Your tree is *Pyrus aria*, or White Beam Tree.

POPPY ANEMONE (Rosa).—This is the single garden Anemone (*A. coronaria*); sow the seed in October. It is quite impossible to answer in this place all your queries about poultry keeping, and it is the less needful because, either by Martin Doyle or Anster Bonn, every one of your questions have been anticipated. Pray refer to our indexes.

SWARM OF BEES.—A correspondent at Peckham, in Surrey, says he had a swarm on the 15th instant.

FOUNTAIN (X. X.).—A stream in your garden may be headed up so as to form a cascade, but to have a fountain you must have the water at a considerable elevation, such as on the top of your house.

HOTBED (S. B.).—There is no "neater" mode of making a hotbed than by having it within brick walls, or what is usually termed a pit. See Mr. Appleby's description of one at page 335 of our last volume.

CHEAP GREENHOUSE (E.).—If you can superintend its erection yourself, have the brick work done by contract,—buy the wooden frame-work at per 100 feet, at the saw mills; contract with a jobbing carpenter to put them up; buy your own glass, and contract with a jobbing glazier to put it in; there is no doubt you may have one built well for £20; but you must use your own common sense. We cannot give working plans. There is no doubt you may move away your greenhouse if you do not attach it to the freehold, but the best way is to have a written permission from your landlord before you begin.

APRICOT GUMMING (A Derbyshire Subscriber).—As the gum exudes from the grafted part, we conclude that the stock is smaller than the graft, and that the sap cannot get back as fast as it is formed. In the first place, cut away any deeply striking roots; and in the second place, bind hay-bands round the bleeding part, stem, and main branches, before the winter sets in. It has been proved that exposure to freezing and sudden thawing is a chief cause of the Apricot's gumming.

HAYMAKING (Sigma).—See "Allotment Farming" in this number.

COCHIN CHINA FOWLS.—"H. H. S. N., Post-office, Colchester," has some chickens to dispose of at ten shillings each.

BEES (P. D. D.).—Do not put water into the feeding-trough beneath your hive. It would tend to increase damp and mouldiness. Keep some water in a vessel near the hives, with pieces of wood floating in it for the bees to alight upon. Your flower-prop is not new.

WATER IMPREGNATED WITH IRON (B. P.).—Try what effect mixing a little gas ammoniacal liquor has with it, and exposing it to the air for a few days, and frequently stirring it. It is impossible for us to give a decided answer without knowing in what state the iron is kept in solution.

CAYENNE PEPPER (A Lover of Flowers from Childhood).—If a little does not effectually kill the Aphides, we can only say, use more. These are points people must ascertain for themselves. Cayenne Pepper is

mixed with colouring matter, and is not so powerful as the Capsicum pods merely broken fine.

POTATOES NOT VEGETATING (J. S. G.).—Potatoes planted at the end of March frequently do not appear above ground until towards the end of May; therefore, yours may yet do so. The half tuber you have sent is healthy enough, but soft, and has the appearance of a tuber that has vegetated, and had the shoots more than once rubbed off. Whether this is so we cannot say. It looks like a Martin's seedling, and if so it is sluggish; at all events, leave them alone for a week or two longer. Your Cabbage-wort Seedlings are probably drawn under ground by the worms. Give it a good soaking with Lime-water.

HORTICULTURAL SHOWS IN JUNE AND JULY (Rev. T. B.).—June 7, Chiswick; 10, London Floricultural; 11, Royal Botanic, Regent's Park; 12, Highbury and Cheltenham; 13, Durham; 17, Guildford; 18, Stamford Hill; 19, Bath; 20, Newbury; 21, Royal Botanic, Regent's Park, for Roses; 24, Northampton; Handworth, and Lozells; 25, Royal South London; 26, Liverpool and Maidstone. July 2, Royal Botanic, Regent's Park, and Norwich; 3, Highbury and Ipswich; 8, South Devon at Plymouth, and Cornwall at Truro; 10, National Floricultural, 21, Regent Street; 18, Beccles; 19, Chiswick; 23, Stamford Hill; 24, Royal South London and Bath; 29, Northampton (Carnation and Picotee), and Handworth and Lozells; 30, Norwich. The seed has been forwarded to Mr. Beaton, and by which he is extremely obliged.

CALENDAR FOR JUNE.

GREENHOUSE.

AIR, admit freely, to all the hardier plants, such as cinerarias, calceolarias, &c., as the cooler they are kept the longer will they bloom, and the freer will they be from insects. The **HARDIER PLANTS** should now be placed out of doors, in a sheltered place, to make room for fresh importations from the pits; and here arises the great difficulty in the case of those who have only one house, as the plants removed, intended to be kept for another year, would have been all the better to have been kept in until the fresh wood was made. Many winter-flowering things, such as *Daphnes*, *Cytisus*, *Heaths*, &c., may now be set in a sheltered place out of doors, and safely kept; but they will neither bloom so fine nor yet so early as they would have done had they been kept longer in the house. Another difficulty arises from the wish to make this single greenhouse suitable for plants in bloom, requiring a cool atmosphere; and plants done blooming, such as early *Camellias* and *Azaleas*, that require a high temperature, and a moist atmosphere, to enable them to make their wood and set their buds early. Any greenhouse may now be used admirably for this purpose, merely by shutting it up early in the afternoon; syringing the plants at the same time, and giving but little air during the day; but then this would soon ruin the health and appearance of such things as calceolarias, &c., in bloom; though it would answer well for bringing on large fuchsias and geraniums for succession. Hence the importance of screens, &c., for securing different temperatures. **CUTTINGS** insert, and pot off when struck; many of the first struck will make fine plants for autumn and the beginning of winter. **CLIMBERS**—many tender annuals, such as *Thunbergia* and *Ipomea*, may now be introduced, either upon pillars or trellises. *Kennedias* and *Zichyas* fasten to pillars and trellises, so that the flowering shoots may hang gracefully and negligently. The same may be said of *Passifloras*, &c. **CLEANLINESS** must be particularly attended to. No plants can be healthy with yellow or dust-encrusted leaves; and the sight of such is always a speaking reproach. The system of picking off every yellow leaf that presented itself as you went round with the watering-pot would prevent the woe-begone aspect which yellow-leaved plants always wear. It always shows a want of system when a set period must be appointed for picking the dead leaves from plants. **GRAFTING** may still be done, in the case of myrtles, oranges, *Daphnes*, *camellias*, &c.; but, as it is getting late, you must try and obtain scions from retarded plants, and then place them in a gentle hot-bed, and keep them close until the union is effected. **ORANGES** and **LEMONS** should have the blossom thinned and impregnated, where fruit is wanted. **SEEDLINGS** of all kinds prick off. **SHIFT** everything that requires it, for all vital action is now rapidly progressing. **SOILS** procure and husband in a dry state; for top-spit turf, nothing is better than stacking it in narrow ridges, and thatching it to keep it dry. **WATERING** will be required oftener; and, in small pots, sometimes twice a-day. *Manure-water* may be given liberally, to promote luxuriant growth when wanted. Let it be weak, however, and given often. Young hands often make great blunders in using it too strong, especially when plants are young.

R. FISH.

PLANT STOVE.

OF ÆSCHYNANTHUS put in cuttings; pot in large pots, and train round a trellis; place some in baskets to suspend from the roof of the stove and orchidhouse. **AMARYLLIS AULICA** and its varieties pot, and plunge in a gentle heat. **ACHIMENES** repot and shade. **BEGONIAS** propagate; train specimens; repot young plants. **BILBERGIAS**, divide such as have bloomed; repot young plants. **CALADIUM BICOLOR** repot; set in saucers of water to encourage large leaves. **CLEODENDRUMS** give one more shift. **CLIMBERS** tie in; wash to keep clean. **ERANTHEMUM PULCHELLUM** and **STRICTUM** raise in quantity to bloom in winter. **GESNERAS** pot, and grow on to increase the size of the bulbs. Put in cuttings of **GLOXINIAS**; pot seedlings, and young plants; place them in heat, a hot-bed with a covering of ashes is the best. **GARDENIAS** done blooming place in a cool pit to rest; put in cuttings in heat. **HEDYCHIUM** plant in large pots to bloom. **INSECTS** destroy diligently. **IXORAS**, put in cuttings; pot young plants and specimens; stopping the former and tie out the latter to allow young shoots to rise from the centre. **LUCULIAS** place out of doors for a month. **MUSAS** plant out in a bed, or shift into large tubs; put dung in hard lumps on the surface, to enrich the soil by the ammonia being washed down when watered. Use liquid manure occasionally. **NEPENTHES** (Pitcher Plants) pot and plunge in bark-bed, or place upon a warm flue, covering it first with moss; syringe the plants and moss daily. **POTTING** may be done throughout all stove

plants; they will require no more this year. **SYRINGE** the walls and walks freely every day. **REMOVE** young stove plants with hard wood into frames to make room for summer blooming *Achimenes*, &c. **STOVE BULBS** done blooming place in cold pit to rest. **WATER**, apply freely at the root of all growing stove-plants.

T. APFLEBY.

FLORISTS' FLOWERS.

AURICULAS pot and place in summer quarters; seedlings transplant, and, as soon as strong enough, put in small pot, singly. **CARNATIONS** and **PICOTEES** place in their blooming quarters; water regularly and layer as soon as the young shoots are long enough. **DAHLIAS** finish planting b.; stake and tie early, to secure the plants from wind; water the ground once a month with limewater to kill slugs. Prick out **SEEDLING** carnations, and other florists' flowers, as soon as large enough. **Pot late struck cuttings.** **HYACINTHS** done flowering lift a little with a spade, leaving the bulbs in to ripen. **IRISES** in flower shelter from sun, wind, and rain. **PINKS** tie to slender sticks. To prevent the pods bursting unequally, put round them a strap of Indian rubber or bass mat before the flower opens; put it on about the centre of the bud; finish piping. **PANSIES** now in bloom protect from sun, wind, and rain; layer long straggling shoots; save seed, and sow immediately. **RANUNCULUS** bed stir the surface and water freely; shelter the flower from unfavourable weather. **TULIPS**, early kinds, take up when the leaves turn yellow, and lay in the sun to dry, dress and store when that takes place. Turn over compost, and procure fresh loam and peat. **WEEDS** carefully eradicate as soon as they appear on every bed and pot in the garden.

ORCHID HOUSE.

AIR, give, on hot sunny days; the aperture to admit it should be over the pipes or flue. **BLOCKS** remove, cover with moss, and syringe every day. **CATTLEYS** place in a cooler house to strengthen their growth. **CREEPERS** tie in and wash clean with syringe and sponge. **FERNS** in this house pot, divide, and sow; take up seedlings amongst the orchids, and pot. **HEAT** increase to 80° in sun by day, and 70° by night. **MOISTURE** in the air supply abundantly; the sun and heat will evaporate it much. **PHALÆNOPSIS**, dip plants on blocks in tepid water twice a day. **POTTING**, continue, to all plants just starting to grow. **STANHOPEAS**, in baskets, dip once a week. **SUSPENDED PLANTS**, not orchids, dip twice a week; place more in baskets, to be coming on. **REST**, give, by lessening the heat and moisture to all orchids that have finished their annual growth.

T. APFLEBY.

FLOWER GARDEN.

ANEMONES, take up as leaves wither: dry and store. **ANNUALS** (Hardy and some Tender), plant out to remain, in showery weather best; some (hardy) may be sowed, b. **AURICULAS**, continue shading; plant offsets; prick out seedlings. **BASKETS** or clumps, form of greenhouse plants. **BEDS**, attend diligently to recent planted; water and stir them in dry weather. **BIENNIALS** and **PERENNIALS**, sow, if omitted, b. **Box edgings** clip. **BULBOUS ROOTS** (Tulips, Jonquils, &c.), not florists' flowers, remove offsets from; dry and store; may transplant some, or keep until autumn; (autumn flowering), as Colchicums, &c., take up as leaves decay, separate offsets, and replant, or not until end of July. **CARNATIONS**, in bloom, attend; aid the bud-pod to split with a pair of narrow sharp-pointed scissors; bandage buds, to prevent bursting, with Indian-rubber rings, or tape; water every second day; tie to supporters, &c.; prick out seedlings; make layers; pipe. **CHRYSANTHEMUMS**, plant out to layer next month. **CYCLAMENS**, transplant. **DAHLIAS**, finish planting out, b. **DRESS** the borders assiduously; neatness now stamps a gardener's character. **FIBROUS-ROOTED** Perennials, propagate by cuttings; shade and water. **FLOWERING PLANTS** generally require training and support. **GRASS**, mow, roll, and trim edges. **GRAVEL**, weed, sweep, and roll. **HEDGES**, clip, c. **LEAVES** and stems decaying, remove as they appear. **LIQUID MANURE**, apply occasionally to all choice flowers. **MIGNONETTE**, plant out; sow, b. **MIMULUSES**, plant out. **PEONIES** (Chinese), water freely with liquid manure, or they will not flower finely. **PINK SEEDLINGS**, prick out; make layers. **PIPING** (or cuttings) of Carnations and Pinks may be planted. **POTTED FLOWERS**, dress, stir earth, and water regularly. **RANUNCULUSES**, take up as leaves wither, dry and store. **ROSES**, bud, lay, and inarch; fumigate with tobacco to destroy the aphid or green fly; **Roses** out of doors, wash with tobacco or ammonia water. **SALVIA PATENS**, pinch down centre stem to make it bushy. **SEEDLINGS** of Perennials and Biennials transplant. **SEEDS** (ripe), gather in dry weather. **SEED VESSELS**, remove, to prolong flowering. **WATER**, give freely and frequently to all newly moved plants, and to others in dry weather; early in the morning or late in the evening is the best time. *Brompton Stocks* and *Moss's Intermediate* should be sown on a north border. Sow another succession of the *low annuals* to flower late, b. Peg down *Salvias*, and, for a time, until the layers are rooted, cut off the flowers. **VERBENAS**, peg down to cover the beds sooner. **TULIPS**, continue to shade to prolong the bloom, b.; towards e. expose them to full sun to ripen the bulbs; take off seed vessels for the same purpose. **SLIPS** of Double Wallflowers, Sweet Williams, and Rockets, put in, either under hand-glasses or under a north wall or low hedge.

D. BEATON.

ORCHARD.

APHIDES, destroy on all trained trees. **APRICOTS**, thin for tarts. **APPLES**, search for caterpillars. **CURRENTS**, stop watery wood. **CURRENTS** (black), water if dry. **CHERRIES**, free from aphides. **DISBUD** all trained trees. **FIGS**, thin the young wood, and stop. **GOOSEBERRIES**, free from caterpillars. **INSECTS** in general, try to extirpate. **MULCHING**, practice where necessary. **NECTARINES**. See Peaches. **NUTS**, dress away suckers. **PEACHES**, thin both wood and fruit, and stop gross shoots. **PLUMS**, cleanse from aphides, and disbud. **PEARS**, disbud and stop. **RASPBERRIES**, thin suckers. **STRAWBERRIES**, water if dry, clear runners, and put something to keep fruit clean; beware of mice. **STRAWBERRY** (ALPINE), clear runners from, and water. **STOPPING**, practice constantly, where necessary. **THINNING** practice, both with fruit and wood. **TRAIN-**

ING, commence, and continue. **VERMIN**, destroy. **VINES**, thin shoots, and stop. **WATERING** attended to. **WASPS**, destroy.

R. ERRINGTON.

FORCING STOVE.

ATMOSPHERIC MOISTURE, secure liberally. **CUCUMBERS**, keep thinned and stopped; give plenty of atmospheric moisture to. **CHERRIES**, water liberally, and cleanse from aphides; ventilate very freely. **CAPSICUMS**, shift finally, and place in a warm situation. **FIRE-HEAT**, dispense with as much as possible. **GRAPES**, thin, and tie shoulders of the late ones. **GRAPES** ripening, remove a few laterals. **LIQUID MANURE**, apply where size and strength are required. **MELONS**, attend to setting, water freely when swelling; thin the vines frequently, and attend to linings; use dressings and fumigations to avert the attacks of insects. **NECTARINES**, treat as Peaches. **PEACHES**, disbud, and stop gross shoots; apply liquid manure, and thin fruit. **PEACHES** ripening, remove those leaves which shade the fruit. **PINES**, shade if the sun is intense; shift liberally the succession; water all when necessary, and keep a jealous eye on bottom-heats. **STRAWBERRIES**, turn out healthy plants from forcing-house; they will fruit in September. **SHADING**, practice with delicate things, during intense sunshine. **VINES**, attend to disbudding and stopping. **VENTILATE** freely. **WATERING**, neglect not.

R. ERRINGTON.

KITCHEN-GARDEN.

ALEXANDERS, earth-stir and earth-up. **ANGELICA**, earth-stir, or earth-up, as the case may require, and promote strong growth with liquid-manure water. **ASPARAGUS** seedlings, keep clear of weeds, and earth-stir to promote growth; beds in cutting sprinkle with salt once a-week during the cutting season, and earth-stir often with some pointed implements; discontinue cutting about the 20th. **BASIL**, plant out in rich warm borders in full crop, and water well previously to planting, should the weather be dry. **BROAD-BEANS**, plant out for late crops in cool situations, in a rich soil, and water well at the time of planting in dry weather. **BEETS**, thin out, and fill up any vacant spaces; do this of a dull evening, with care, and water well at the time. **BORAGE**, thin ten inches apart, and save seed from autumn-sown. **BORECOLES**, prick out of all kinds four to six inches apart every way. **BRUSSELS SPROUTS** the same. **BROCOLIS** the same, and plant out finally of early kinds, such as the *Cape* and *Walcheren*. **CABBAGES**, prick or plant out finally. **CARROTS**, thin out main crops six to nine inches apart, and use the hoe freely among them. **CARDOONS**, thin out and attend to. **CAULIFLOWERS**, prick out, or plant out, in succession; basin up the early crop, and water well, and with manured water at least once a-week, and look over and invert a few leaves down over the heads of those that are turning in, to preserve them of a white colour. **CELEBY**, prick out, and plant out finally, and water well at the same time. **CUCUMBERS**, plant out under hand-glasses on a little bottom-heat; keep the glasses close until the plants are established, after which inure them to the open air by tilting, &c. Those in a forwarder state let the earth round the hills or ridges be well forked up for the roots to run out; stop and train out their stems; those in pits and frames should be weekly attended to, as to stopping and thinning, and all decayed leaves removed, and a top-dressing given if required. **CAPSICUMS**, plant out in warm borders. **ENDIVE**, make a little sowing of both kinds, Batavian and Green Curled, for early use. **GARLIC**, **SHALLOTS**, and **UNDERGROUND ONIONS** will be fit to take up towards the end of the month, and should be dried off well before being stored away for use. **HERBS** of all kinds should be cut when in flower for drying or distilling. **JERUSALEM ARTICHOKEs**, keep clear of weeds. **KIDNEY-BEANS**, dwarfs and runners, sow for late and last crops, and should the ground be very dry at the time of sowing, give a thorough soaking of water, which will cause them to vegetate quickly; attend to sticking and earth-stirring among advancing crops. **LEEKS**, thin out and transplant. **LETTUCES**, sow often, and thin out early; they should be sown where they are to remain, to mature their growth; place strong sticks to those intended for seed to tie them to, and tie in a few weekly for use according to the consumption. **MELONS**, lose no time in planting out for late and last crops; look daily to those setting their fruit; attend to this setting and stopping about eleven o'clock in the forenoon, and to top-dressing or earthing-up, &c., about three in the afternoon of a fine calm day, after which sprinkle with water, and shut up early; give an abundance of air to those ripening off their fruit, and be sparing of water among them. **MINT**, keep clear of weeds. **SWEET OR KNOTTED MARJORUM**, plant out in rich warm borders. **ONIONS**, pay particular attention to early thinning out, and surface earth-stirring, or fill up any vacant spaces by transplanting. **PARSLEY**, sow or thin out, and transplant. **HAMBURGH PARSLEY**, thin out. **PARSNIPS**, finally thin out eight to ten inches apart, and use the hoe freely among them. **PEAS**, any of the tall *Knights Marrow* kinds may be sown the first of this month, the earth being thoroughly soaked with water, should the weather be dry; but towards the end sow any of the dwarf early kinds, such as *Early Warwick*, &c.; attend to hoeing and sticking advancing crops. **POTATOES**, attend to earth-stirring or earthing-up without injury to the young fibre. **RADISHES**, sow often in cool situations, in rich soil. **SAVOYS**, prick and plant out finally. **SPINACH**, sow in succession, and thin out. **SEA-KALE**, attend to surface-stirring and thinning-out old crowns, if not already done; seedlings thin out; cut away any flower-stems unless seed is required. **SCORZONERA**, **SALSAFY**, and **SKIRRETS**, thin out from four to six inches apart; use the hoe freely to encourage growth. **TURNIPS**, sow and thin out young crops. **VEGETABLE MARROWS**, lose no time in planting out. **THYME**, plant out seedlings, b. Use the *hoe* freely in dry weather; attend to all kinds of *pricking* or *planting-out* in rainy weather, or during evenings, as very much may be done in this way at that time of the day during very dry and hot weather; for pricking-out, let the beds or borders be dug up, made neat, and lined out, and thoroughly well watered an hour or two before hand, and again after planting.

T. WEAVER.

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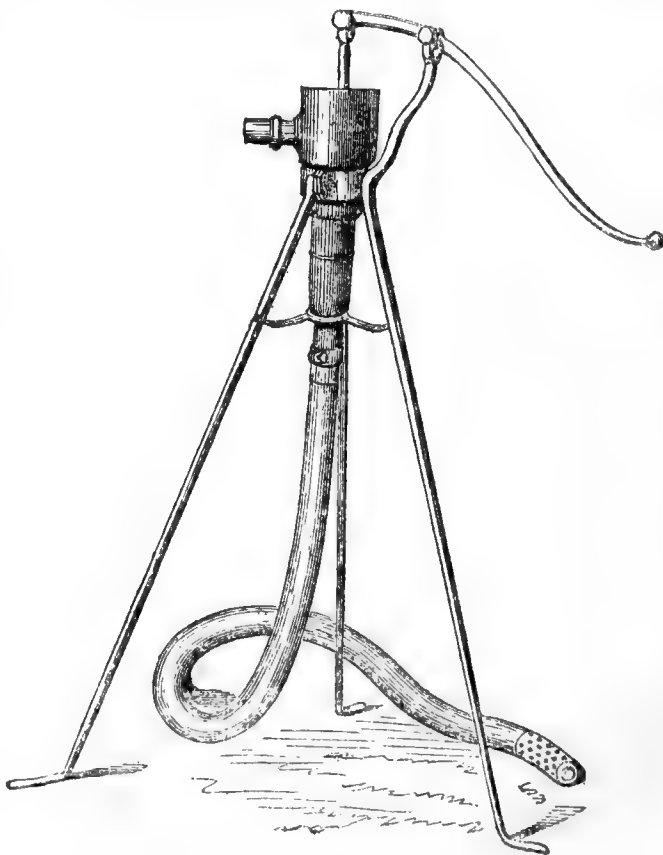
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WEEKLY CALENDAR.

M D	W D	JUNE 5—11, 1851.	WEATHER NEAR LONDON IN 1850.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bef. Sun.	Day of Year
			Barometer.	Thermo.	Wind.	Rain in In.						
5	Th	K. HANOVER B. 1771. Pink flowers. Common Blue Butterfly seen.	29.987—29.795	85—57	W.	0.20	48 a. 3	8 a. 8	0 8	6	1 55	156
6	F		30.109—30.090	66—51	N.E.	0.07	47	9	0 38	7	1 46	157
7	S	Oxford Term ends.	30.137—29.920	71—50	N.W.	—	47	10	1 5	8	1 35	158
8	SUN	WHIT SUNDAY. Portugal Laurel fl.	29.990—29.892	66—42	N.E.	—	46	11	1 30	9	1 24	159
9	M	WHIT MONDAY. Bladder Campion fl.	29.918—29.792	65—43	N.E.	—	46	12	1 53	10	1 12	160
10	Tu	WHIT TUESDAY.	29.728—29.668	60—42	N.E.	—	45	13	2 16	11	1 1	161
11	W	Oxford Term begins. ST. BARNABAS.	29.851—29.797	65—37	N.E.	—	45	13	2 40	12	0 49	162

WHITSUNTIDE is usually one of the most brilliant holiday-tides of the whole year. It is almost always a time of sunshine and soft breezes, and being also the high festival time of our flowers, we may then realize, as nearly as is permitted to exiles from Paradise, that happy period when might be heard "the voice of God, walking in the midst of the Garden." Perhaps THOMAS FAIRCHILD felt this, and for that reason provided those funds which ever since his death have been devoted to secure the delivery, on each Whit-Tuesday, of a Lecture "On the wonderful works of God in the Creation; or, On the certainty of the Resurrection of the dead, proved by the certain changes of the animal and vegetable parts of the Creation." Bright themes are these, and around them the scienced and the eloquent have concentrated illustrations which demonstrate, beyond dispute, that an all-wise and all-powerful Being formed the world, and formed it, too, with an all-benevolent design. Nor is that design abortive; for, as Paley remarked, even in the pain and weakness of his dying hours—"It is a happy world after all." Happy, not only because enjoyment prevails here, but because the same design assures us that the day, or rather the eternity, shall come when there shall be no more death—but as the seed dies to become fruitful, and as the perfect Golden-eyed Lacing comes forth from the cerements of the chrysalis, so we have the glorious hope that we shall rise from the grave to rejoin, and be ever present with, those loved ones who have passed before, to abide with Him who lived and died, also, "to prepare a place" for them.

Connections and thoughts such as these comforted and elevated the heart of Fairchild, for he not only founded the lecture on such themes which we have mentioned, but he tells us—"When we are not yet arrived at the pleasures of a large garden, or cannot enjoy the benefit of a large piece of ground, we content ourselves with a nosegay rather than fail. There is, I confess, a very wide difference; but where a little is only to be had, we should be content with a little; industry will always find out more: and if their riches do not too much engage their mind, they may have content too, for whoever understands and loves a garden may have content if he will, because he has opportunity every day of contemplating the works of the Creation, and admiring the power and wisdom of the Creator; which I think is the greatest happiness."

Mr. Fairchild was one of the few gardeners of his time who united a love of science with the practice of his art. He was a nurseryman and florist residing at Hoxton, where his establishments, known as "The City Gardens," were the most extensive and best near London, and were greatly frequented, not only for their agreeable situation, but for the variety, rarity, and excellence of their productions. He was also one of the latest English cultivators of a vineyard, for he had one there as late as 1722. Long residence in the vicinity of the metropolis made him painfully conscious how, by degrees, plants ceased to be cultivatable there, which had flourished amid its houses in his younger days. To enable the citizens to contend against this growing plant-mortality, he published, in 1722, *The City Gardener, containing the most experienced method of cultivating and ordering such evergreens, fruit-trees, flowering shrubs, flowers, exotick plants, &c., as will be ornamental, and thrive best in the London Gardens*. In its preface, he says;—"I have, for upwards of thirty years been placed near London, on a spot of ground where I have raised several thousand plants, both from foreign countries, and of the English growth, and in that time, and from observation I have made in the London practice of gardening, I find that everything will not prosper in London, either because the smoke of the sea-coal does hurt to some plants, or else because those people who have little gardens in London, do not know how to manage their plants when they have got them. Yet, one may guess at the general love my fellow-citizens have for gardening, in the midst of their toil and labour, by observing how much use they make of every favourable glance of the sun to come abroad, and of their

furnishing their rooms or chambers with basons of flowers or bough-pots, rather than not have something of a garden before them."

As Mr. Fairchild was alarmed by the gradual extinction of plants, so we, on the other hand, are now astonished to find such statements of what still flourished in his time within the city's bounds, as are contained in these extracts:

"Pears bear very good fruit, as may be observed in very close places and confined allies about Barbican, and other places about Aldersgate-street, Bishopsgate-street, &c." "To these we may add the Vine, which will do very well in London, either against walls, or without them. In Leicester Fields, there is a Vine that bears good grapes every year."

"Figs prosper extremely in the city, and the smoke has no ill-effect upon them. The Reverend Mr. Bennet has some of them in his garden at Cripplegate. They have ripened very well in the Roll's Garden in Chancery Lane."

"There are now two very large Mulberry-trees growing in a little square yard, about 16 foot square, at Sam's Coffee House in Ludgate-street."

Hoxton is in the parish of Shoreditch, and when Mr. Fairchild died, October 10th, 1729, he gave, by his will, the sum of £25, to the trustees of the Charity School, and the churchwardens, to be by them placed out at interest, for the payment of 20s. annually for ever, for a sermon on Whitsun Tuesday, in the afternoon, at the parish church, on the subjects we have already particularized. The bequest, in 1746, was increased to £100, South Sea Stock, and vested in the President and Fellows of the Royal Society, and the interest is paid to the lecturer annually. Of the Fairchild Lectures, the following have been published:—

By Dr. Denne, (*Matt. vi. 28—30*), in 1730. (*Gen. i. 11—13*), in 1733, on vegetable Creation. And (*Psal. viii. 4—6*), in 1745, on God's regard to man in his works of Creation. By Dr. Wm. Stukeley, (*Gen. i. 11*), in 1760—63, three sermons. And by the Rev. Wm. Jones, one on Botanical Philosophy, another on the Economy of Beasts and Cattle; and a third, (*Gen. i. 9, 10*), on the Natural History of the Earth, and its Minerals.

Besides these, among the preachers we find the Rev. H. Wheatley, Rev. John Bridgen, Rev. John Vade, Rev. Michael Marlow, Rev. Dr. Anselm Bayley, Rev. Henry Owen, and Rev. Samuel Ayscough.

Besides the work we have mentioned, Mr. Fairchild communicated a paper to the Royal Society, *On the different and sometimes contrary motion of the sap in Plants*, (*Phil. Trans.*, No. 384, 1724), and the following extracts will show his thoughts and experiments relative to subjects which still interest the gardener and botanist. He grafted *Laureola*, an evergreen, upon *Mezereon*, a deciduous shrub, and *Evergreen Oak of Virginia*, upon the common *English Oak*, yet both retained their leaves and flourished, "which plainly shows that the juices rise upwards in winter." Mr. Fairchild adds, that "the Crab stock makes the wood of the Apple-tree (grafted on it) more firm and lasting than that on the Apple stock; and Peaches and Almonds budded on Plums, are more lasting than those on Peach-trees." "I inarched a Pear-tree upon two Pear stocks in March, 1721-2, which is now in a good flourishing condition, with a branch in blossom, and receiveth no nourishment but by the two inarched branches, the roots being out of the ground, and though it was done above two years ago, it is now shooting suckers out of the roots, which proveth that the branches are as useful to support the roots, as the roots the branches, and it is, therefore, no wonder that so many trees miscarry in planting, when there are no branches left on the head."

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-four years, the average highest and lowest temperatures of these days, are 74.4° and 48°, respectively. The greatest heat 90°, was on the 7th, 1846, and the lowest cold, 35°, on the 8th, in 1833. During the time 100 days were fine, and on 68 rain fell.

A BEAUTIFUL volume has just issued from the press, entitled *Sertum Ecclesiæ: The Church's Flowers*.* Even were the work insipid and insignificant, it could have no unfriendly criticism in our pages, for we find this sentence in its preface: "The profits of the volume (if any) will go to assist in the education, as governess, of a young person from the Isle of Skye, whose parents have been reduced, by accumulated misfortunes, from a higher condition to one of exceeding privation; their support, and the education of their younger children, must now chiefly depend on her exertions." We need say no more to awaken an interest and a sympathy

* Published by R. Grant and Son, Edinburgh; and F. and J. Rivington, London.

among our readers, nor need we recommend them to purchase the work—but we may add, that the purchase money is calculated to secure more than one harvest of good, for the volume has more than the one hallowed purpose we have named.

Its object, an object as old as the Olive-spray Dove-borne into the Ark, is to associate particular plants with particular events. It quotes at length the statements in Holy Writ relative to each, adding such poetical quotations as are strikingly applicable, and giving with each a drawing of a flower, which might have been much better, and yet not have justified the cynical criticism that they were needlessly superior.

It is a volume excellently suited to the season of the

year; and just before we penned this notice we rested on a grassy bank beneath a treillage of Roses, near borders gemmed with Geraniums, Pansies, spicey Stocks, Eschscholtzias, and Wall-flowers. It was at that hour of the almost departed sun, when the blue mist is prophetic of another glowing day on the morrow, when the coolness is no more than refreshing, and when the quietude is rendered more striking by the buzz of the humble-bee being the loudest sound upon the ear, as he struggles to escape from the intricacies of the clustered flowers. In such an hour and place we proceeded to complete our perusal of this volume, and it seemed somewhat better than mere accident, that we opened its pages at those on which were these lines:—

Broods there some spirit here?
The summer leaves hang silent as a cloud;
And o'er the pools, all still and darkly clear,
The wild wood-hyacinth with awe seems bowed;
And something of a tender cloistral gloom
Deepens the violet's bloom.

The very light that streams
Through the dim dewy veil of foliage round,
Comes tremulous with emerald-tinted gleams,
As if it knew the place were holy ground;
And would not startle, with too bright a burst,
Flowers all divinely nurs'd.

* * * * *

Yes, lightly, softly move!
There is a power, a presence in the woods;
A viewless Being, that, with life and love,
Informs the reverential solitudes:
The rich air knows it, and the mossy sod—
Thou—Thou art here, my God!

WE have received the following interesting communication from Mr. J. Henshall, dated Java, March 15th, 1851, and we shall be obliged by a continuance of such communications.

"I write to you these few lines in reference to *Gordonia Javanica*, noticed amongst the "New Plants," in THE COTTAGE GARDENER, for December, 1850, vol. v., and page 187-8, wherein it appears that the true habit of that plant is at present unknown. Should you think the following accounts are of any service to your valuable work, they are with pleasure at your service:—I first discovered this beautiful plant, *Gordonia Javanica*, on the plains in the district of *Toeyoe*, near the base of the mountain *Pangerangoe*, at an elevation of 3500 feet above the level of the sea. It is only found in exposed situations, where the temperature ranges from *Fahn*. 64° to 70° in the day, and occasionally as low as 54° at midnight. In its native habit, it is a free flowerer, seldom exceeding five feet in height, and will, no doubt, prove a valuable greenhouse plant. The most suitable soil appears to be sandy loam, combined with vegetable mould, and a treatment similar to that given to *Camellias*. It is not, like many other plants, distributed over a wide surface of land, but is confined to the western parts of *Java*, known as the *Sundanese* district. Its native name is *Hoeroe*."

GARDENING GOSSIP.

THERE is scarcely a more brilliant plant than a well-bloomed *Mimulus*, and few flowers sport so much at different seasons of the year; but they are so easily propagated that they are looked upon as weeds.

In a batch of seedlings, we may see a hundred variations in the marking, although the colours are, perhaps, essentially the same. We remember seeing, a few years ago, the sporting of the ground to a cream colour, and the marking to a purple. The varieties so marked came small, and we do not recollect to have seen them improved upon. In fact, the *Mimulus* was neglected as a thing too easily grown to show the skill of the gardener, but it ought not to be thrown aside.

In judging *Pelargoniums*, there are several points frequently overlooked. In the first place, seedlings being often exhibited with one or two pips open, the censors, naturally taken with the novelty and brilliance, perhaps also the good form of the individual flower, award it the prize, when it is possible that the plant will not truss well; the footstalks may be too long when all the blooms are out, and the flowers may lay or hang about, instead of forming a compact bunch. Again, the first flower in a truss may decay before the whole are full blown, and the colour may not stand; the brilliancy of the opening flower may depart before it is full-grown. Another consideration is the form of the flower, which, before it is quite open, may seem unobjectionable, because it is in a cupped state, but opening wider it may be loose and worthless. Therefore, no seedling should be judged until it is shown with the trusses full bloomed. The habit of a plant has a good deal to do with its value, and no raiser should attempt to force a seedling, nor to grow it carelessly, for it impairs the flower, to say nothing about the disadvantage to the plant.

It seems there are to be three *Horticultural Shows* at *Vauxhall Gardens* this season. We have not at present any distinct plan before us, but it seems there is to be a sum of twenty-five pounds given in prizes at each show.

This is a hit at the South London Floricultural Society, which may be felt if their own members encourage the rivalry; but if they abstain from showing, it will have no bad effect. The more shows there are, the better for trade, so that they do not weaken one another.

The *Amateur Tulip Society* is rapidly progressing, and, before this appears, they will have had their annual show at the Horns Tavern, Kennington Common. It was, at one time, feared that the bad judgment last year would have prevented some from exhibiting, but the addition of two judges has removed the chance of a second mishap.

Gardening in New Zealand.—Our attention has been directed to Brees' Panorama, now exhibiting in London, in which are seen very distinctly the principal gardens of the English settlers, laid out with a great deal of taste, and showing that vegetation is most luxuriant. Our ordinary shrubs become in an incredible short time immense trees.

Gardeners who contemplate emigration, must not fail to visit this exhibition, for they will gain more information on gardening in New Zealand than they can in a month's reading; an intelligent man explains every thing, and points out the residences of several English settlers. We have before us, also, a letter dated Nelson, New Zealand, September, 1850, in which the writer, after observing that month answers to our March, but that it has more of its characteristic "lamb" than of its "lion," adds—"I think before many years are past, we shall be making champagne here, for the number of vines every body grows in their gardens is quite astonishing. It is said, by competent judges, that our hops and barley are the finest in the world."

Society for Encouraging Floriculture in Great Britain. The subject at the last meeting was *Tulips*, and the point for discussion, the plurality of names by which some Tulips are known, many of them being sent out under ten or twelve different appellations. Few, however, who talk of good and bad strains of the same flower

think of this simple fact: seeds out of the same pod will bring flowers a good deal alike; but there is no such thing as good and bad strains of the same identical variety. If we have a very foul flower, and a very fine one that we know to be from the same origin, we may call the better one a fine strain, and the other a coarse strain; but another season the so-called fine strain will be as coarse as it can be, and the coarse one altogether as fine.

We know there are many tulips called *Polyphemus* that are not true, they are as similar as two seeds from the same pod may be, and one may be finer than another. A so-called *Polyphemus* that will constantly come fine would be invaluable. Brown's *Ulysses* is a seedling from *Polyphemus*, and in constancy, as well as good points, in many respects superior. Tulips were reported to be backward. Nothing of consequence exhibited.

No less than seventeen nurserymen have availed themselves of permission to exhibit plants in the *Crystal Palace*, and to us, Goths as we are, the plants formed the most striking feature.

The public have learned rather an important fact, too, for Mr. Fergusson, of Stowe, informs them in a very conspicuous manner, that he sends out bedding-plants at a shilling a dozen, and has taken orders at the palace for thousands. Nurserymen are the only people that do actual business in the exhibition, and the people in the refreshment-rooms seem to be the only ones that do business near it.

NATIONAL FLORICULTURAL SOCIETY, May 22nd.—A. W. Newhall, Esq., of Woolwich, in the chair. *Censors*, Messrs. Davidson, Woodhouse, Robinson, Ayres, Lidgard, Goldham, Parsons, and Staines. Thirteen new members were elected, and four proposed to be ballotted for at the next meeting. As usual there were a great number of seedlings of all the florists' flowers now in bloom exhibited, and none were without some desirable quality; but it must be allowed, very few had a decided improvement in every point. The censors only selected the following:—

A certificate to Mr. E. G. Henderson, of St. John's Wood, for a *Cineraria*, named *Rosalind*, with a grey disc, white ground, and beautifully edged with sky blue. It was, also, of a good form and substance. A certificate to Mr. Hunt, of Maida Vale, for a *Pansy*, named *Pandora*, with a yellow ground, edged broadly with purple, pleasingly shaded with puce; a fair size, good form and substance. A commendation was given to Mr. Ambrose for his *Cineraria*, named *Formosa*, with a white ground, dark disc, and rosy purple tip. A commendation to Mr. E. G. Henderson for his *Cineraria*, named *Nonesuch*, a light purple self of fair properties. A commendation to Mr. Chater, of Saffron Walden, for a *Cineraria*, a white self of a good shape; likely to be useful. *Pelargoniums*, *Magnet*, *Chieftain*, and *Herald*, came from Mr. Hoyle, of Reading. The first and second we have already noticed; the third is new, and desirable, with dark top petals, and the lower beautifully mottled, and a clear white eye. The censors desired this to be shown again.

Mr. Dobson, gardener to E. Beck, Esq., Isleworth, sent his *Pelargonium*, *Incomparable*, a flower of considerable merit, and *Mable*, a new striking flower, with dark upper petals, and light lower one tipped with dark colour.

Mr. Bragg, of Slough, sent also some seedlings of *Pelargoniums*, the most remarkable of which was one named *Prince Albert*. This was a smooth well-formed flower, the upper petals dark purple, the lower a pleasing rose-colour.

Mr. Ambrose had also several seedling *Fancy Pelargoniums*. The best was one named *Figaro*, with very large flowers of a light rosy colour.

Mr. Gaines, sent several seedling *Calceolarias* of some merit, especially those named *Confidence*, a dark flower well marked, and *Minerva*, yellow ground, and covered with well-

defined dark spots. Messrs. Henderson, of Pine-apple-place, sent several seedling *Calceolarias*, well marked, but deficient in form.

Mr. Willison, of Whitby, Yorkshire, sent several breeder *Tulips* of some merit, especially one named *Juliet*, a finely-formed rose with a clean bottom. Mr. E. G. Henderson had some seedlings or new *Gloxinias*; one named *Van Humboldt* was good—a light variety in the way of *Alba sanguinea*.

Mr. Moore, of Perry Bar, near Birmingham, sent several seedling cut flowers of *Rhododendrons*, chiefly scarlet, but not sufficiently distinct to merit a notice by the censors.

The tables were ornamented with collections of *Cinerarias* of named kinds, from Messrs. Henderson, of Pine-apple place, and from Mr. E. G. Henderson, of St. John's Wood; also collections of *Pansies* from Messrs. Bragg, Turner, Brown, and Skinner. *Fancy Pelargoniums* from Messrs. Ayres, Ambrose, and others. These collections of approved named varieties are exceedingly useful, as well as ornamental: they serve as a beacon and guide to the censors not to give any prizes to any seedlings but what are decided improvements upon those of established character.

The *Trowbridge Horticultural Society's* Second Grand Exhibition will be held on the 20th of August, and not on the 27th, as originally announced. The prizes are liberal, varying from £5. downwards. E. Y.

NEW PLANTS.

THEIR PORTRAITS AND BIOGRAPHIES.



OFFICINAL OR INDIAN TAMARIND (*Tamarindus officinalis* or *Indicus*).—The genus *Tamarindus* was named by the great Linnæus, from the Arabic name of the Date, *Tamar*, and *Indus*, India, that is literally the Indian Date. In his sexual system it stands in the sixteenth class, *Monadelphia*, the stamens being monadelphous—that is, joined together with the style at the bottom, and 6th order *Decandria*, the stamens being nine or ten in number, three of which only are fertile. It belongs to the *Rectembryous* division of *Leguminous Plants*

(Fabaceæ), a division founded by Decandolle, and including all the plants in the order that have a straight embryo. There are nearly seven thousand species of leguminous plants described, and these are sub-divided into *orders*, *sub-orders*, and *tribes*, for the facility of classifying them. The *sub-order* to which the Tamarind is referred, is called *Casalpinia*, and the *tribe* of that sub-order is called *Amherstia*, after that noble tree named after Lady Amherst, which was lately introduced to England, and so successfully flowered by Mrs. Lawrence. *Amherstia*, therefore, is in close affinity with the Tamarind, as are also such noble plants as *Brownea*, *Humboldtia*, *Jonesia*, *Schotia*, and others. The flowers of the Tamarind are produced in loose bunches, six or more together, from the side branches; they are yellowish, with red streaks, and are succeeded by thick, compressed seed-pods, by which the West Indian and South American Tamarind is distinguished, chiefly from the Asiatic species, the former having short pods generally from two to three inches long, while those of the Eastern tree are twice or three times that length. The pod is one-celled, having from three to six seeds, and the valves are filled with an acid stringy pulp between the two linings or covering, called by botanists *endocarp* and *epicarp*, or the inner and outer lining.

The East Indian Tamarinds are drier and darker than those from the West Indies, but they contain more of the pulp, and being generally preserved without sugar, they are better for medicinal use than those from the West, which are more red, less pulpy, and being preserved with sugar, are more relished in confections, which have a pleasant, acid, astringent taste, with somewhat of a vinous flavour. A very grateful drink for the sick-room may easily be made by pouring boiling water over Tamarinds. Tamarind whey is obtained by boiling two ounces of Tamarind pulp with two pints of milk. In hot countries dried Tamarind is used as food, and travellers carry it for the purpose of dissolving it in water for refreshing drink, and in India sherbet and vinegar are prepared from it. The Tamarind grows to the size of a large timber tree, covered with a rough brown bark, a large branching head clothed with light green leaves, arranged in the manner called by botanists, abruptly-pinnate—that is, with leaflets arranged like those of the ash without the odd or end one; in this way many sets of pairs of leaves on one common stalk are produced by the Tamarind-tree. With us the Tamarind is a stove plant, easily propagated by seeds, sowing them in a hotbed in the spring, and when the plants are three inches long they should be put into separate small pots, and again plunged in bottom-heat. If rightly managed, they will grow very fast, and be a yard long by the end of the first season; but under the best gardeners they are not likely to flower under ten or twelve years of age. The curious, however, might graft scions of established old flowering-plants on such seedlings, the second spring after the seeds were sown, and thus obtain flowering-plants in a comparatively short time. After all, the Tamarind is only applicable to large botanic gardens, or for large houses solely devoted to the cultivation of tropical fruit, as Mango, Cinnamon, and the like.

The *Tamarindus officinalis* has leaves composed of from twelve to sixteen pairs of stalkless, oval leaflets; flowers in racemes at the ends of the branches; calyx of four sections or sepals, one much larger than the others; petals three, nearly equal, straw-coloured, streaked with red. J. B.

THE FRUIT-GARDEN.

YOUNG VINES.—The rearing of young vines in newly planted vineries, is, we conceive, so important an affair, that no apology is necessary in introducing the subject in a *special* manner. Few things are more grievous to

the proprietor of new vineries—constructed at much expense, and in which every available improvement is introduced—than to find that he cannot get his vines to succeed. The following is an extract, verbatim, from a letter received yesterday from a reverend gentleman in Derbyshire, concerning some vines planted by him last year:—"I must trouble you to give me a little advice about my vines. For the life of me I cannot make them grow. They are alive, with small *bushy heads*, but refuse to send out any vigorous shoots. I fancied something was wrong at the roots, so last week I took them up, and replanted them in a more porous soil." Now this depicts, it is to be feared, the complaints of many others. It so happens, that we saw the vinery, in the border of which these were planted, just previous to the operation, and, from what can be remembered, the border was scarcely above the ordinary ground level; and that, too, the adhesive and stubborn soil of the corn-growing districts of Derbyshire. Such errors almost always originate in the house itself, in consequence of the floor-line being pitched too low. We have seen, in our time, scores of houses thus misplanned; we had almost said the majority were so a few years since. It is strange that people do not well consider this before beginning to build; for, supposing a gentleman about to erect such a structure, what is the first thing to be done? We speak not here of how the interior is to be appropriated, or, in other words, the interior fittings, but of the shell of the house. Well; a general "floor-line" must be drawn, on this the estimated width of the house laid down; and now he must make up his mind whether he will have front sashes or not, for on these and their depth depend the relation that ought to exist between the general floor-line of the house, and the average ordinary ground level outside. And why? Simply because the vines have to enter the house immediately on a level with the border surface, and that surface cannot be carried higher than the solid masonry; and where the glass begins the border must end, as to its surface level. So it appears, that within the front wall plate, or the sill, if a front sash, must generally determine the height of the border surface. These things settled, viz., the height at front and back from the floor-line, and this line determined either by the wall-plate or the sash-sill, nothing remains but so to raise the floor-line in the sketch above the ordinary average level of the locality, as that the border, when made, may be in a position to freely part with its own surplus moisture at any time, instead, as is too often the case, being made a recipient of the moisture from other parts of the garden. As a general rule, we should say, let one-half the volume of the border be above the ordinary ground level. So that if a border be made two feet in depth of soil, there will, of course, be one foot above, and one below the ground level. But we return to our text.

MANAGEMENT OF NEWLY PLANTED VINES.—It is scarcely necessary here to ask whether the ball of earth was dislodged in the act of planting. Most persons, now-a-days, steer clear of that short-sighted policy which thinks to gain time ultimately, by planting things out with solid and nearly impervious balls of earth. Mr. Beaton has most ably shown this in several papers, and in his opinions thereon I fully coincide. One thing may, however, be observed as to this course, and that is, the plant so turned out, perhaps requires, under certain circumstances, a little more nursing than those with balls, for a little while; for if the balls be moist, they possess a living independent of the adjacent soil for a while; and so they need, for it is long before a root coiled like a boa-constrictor can adapt itself to a state of liberty. The other, however, soon acquires all the freedom of a seedling, and prepares itself speedily to invest the whole area of the border;

for the free extension of the already existing fibres soon induce a vigorous shoot or two, and thence, by reciprocation, a renewed demand on the root action; and Nature, with her plastic power, soon frames out, and brings forth, another series of roots of a much greater calibre than the first set. When newly planted vines thrive as they ought, they soon acquire a considerable amount of strength; and the rising stem, in consequence, becomes much thicker in the young shoot than in the older wood from whence it sprang. In this condition, lateral shoots soon begin to be developed; and it is the practice with many cultivators to pinch or stop these to one eye as soon as they lengthen. This practice we do think is, in such cases, carried to an imprudent extreme, unless it be that the cultivator unwisely determines to suffer the young vines to carry a crop in the second year; a proceeding which cannot be too severely reprobated. The third year, we suggest, is soon enough for bearing, and such being the case, we would advise, that the laterals alluded to, be suffered to extend some three of four eyes at least; and when stopped, to be done so in a steady, progressive way, not in a hurry, allowing the leading shoots to extend considerably first. There can be little doubt, we think, that in the case of very young vines, every stopping is a slight check for a few days on a free extension of the existing fibres, and slightly impedes the formation of new ones. When, indeed, the shoot has extended some twelve or fourteen feet, which will not be before the end of July, then a progressive removal of the laterals may be made, beginning, of course, at the lower end of the vine, and clearing them partially, or wholly away, as far as the first stopping of the main shoot. This latter process we may now advert to, for the inexperienced sometimes seem much puzzled to know whether to stop, and where. Supposing the young plants have to be trained on the spurring system, which, although it may not produce bunches quite so large as the cane method, is by far the most systematic and satisfactory mode in the end; we think it an advisable course to stop about two or three eyes beyond the point to which the young cane will be cut back at the winter's pruning. If the vines thrive, we should expect them thus to bear the whole length of the rafters in the fourth or fifth year. Thus, vines planted in March, 1851, should, when winter-pruned, occupy one-third of the length of the rafter. At the next winter's pruning, another third; and in the succeeding one, the remaining third; and in March, 1855, the last third, reaching the back of the house, will have developed its spurs ready for fruiting; and then the whole stem will be studded with spurs, at regular distances, with nearly as much precision as a joiner could by art place them.

The principle, then, on which we would manage such affairs is, that of securing strong and confirmed spurs one year previous to their bearing; and this done, and the vine in a sound, elevated, and healthful soil, we would guarantee the vines to produce equal crops every year, for nearly a century, if necessary.

To revert to the stopping them on the principles here advised; after stopping the leading shoots the first summer, at somewhere near half way up the rafter, we would suffer the vine to ramble almost unmolested, merely stopping laterals which threaten to cross and confuse, or which have reached the back of the house. The stopping here recommended will have the effect of rendering the buds below it more firm and plump, they will consequently develope fine spurs.

In each succeeding year, whilst completing their spurs, the same practice may be followed until the whole tree is in full bearing, when the ordinary routine of vine culture may be pursued. Thus, in the third year, the lowest portion of the stem, about a third, will carry a crop of about six or seven bunches to a vine, each one-

and-a-half to two pounds weight. In the next year, both that and the second portion will be cropped to double that amount; and in the following year the whole length will be in bearing, and will average about one-and-a-half pounds per lineal foot up the rafter; so that from a fifteen foot rafter, quite twenty pounds of good grapes may be obtained, and that, too, all else being right, for very many years successively.

We know full well that all this requires patience; and there are those who will prophesy still more abundant things. It will be urged that you can easily run a cane up to the back in one summer, and bear it the whole length in the next. Now the unwary are apt to be caught in this way, inasmuch as such *may be done*; but those who offer this famous recipe, do not care about the permanency of the vines, they leave that to their successors.

Indeed, owing to the public pruriency for quick returns, a custom prevailed amongst some gentlemen of sharp practice, a few years since, of advertising for a gardener's situation, on the basis of this very eminent qualification, viz., that of being able to plant a vinery one year, and cause the roof, albeit metallic, to bend with its vinous treasures in the next.

Depend upon it, a vine should be allowed to acquire some stamina, some "stock in hand" to trade upon, before embarking in large speculations; or, like some Jack-in-the-box tradesman, poor *Vitis* may be the admiration of every body one year, and in the Gazette the very next.

R. ERRINGTON.

THE FLOWER-GARDEN.

COMPANION TO THE CALENDAR FOR JUNE.—Anemones, Ranunculuses, Hyacinths, Tulips, Spanish and English bulbous Irises, also Crocuses, and spring-flowering Daffodils, or Narcissuses of sorts, and many other border roots, bulbs, corms, or by whatever other name we choose to call such things, may, or may not, be taken up and dried as soon as the leaves decay. *Why do we take up bulbs?* Merely for the sake of convenience, either to get the ground ready for another crop, or to better it for the bulbs another year; and, perhaps, in one or two instances, we gain something by keeping one or two families from growing too soon in the autumn for our climate, as a long winter hurts them if they break ground before Christmas. There are bulbs which certainly should not be removed oftener than once in five years at the least; others there are which require to be taken up every third year, because they make such quantities of offsets, or little side bulbs, as choke the old ones, or press so hard upon them as to prevent their flowering satisfactorily. *Anemones* and *Ranunculuses* are very apt to commence growing early in the autumn, if the rains come down much in August. All this, however, is only the surface of a current which has flowed down to us from nobody knows how long a time back. The *Scarlet Martagon Lilies* ("the Lilies of the field") on the plains of Sharon, have not been taken up or transplanted since they were referred to in the Sermon on the Mount, and yet, according to recent accounts, are as gay and as large as the same sort is with us with all our removings. Then the old notion that offsets hinder parent plants from flowering, is totally refuted by Dr. Herbert's *Gladioli*. Where is the bulb which "offsets" more than they? Yet Dr. Herbert ascribed his success in flowering them on the same spot, without once being removed for upwards of thirty years, to these very offsets causing a better drainage; but then we must recollect that the old bulbs of *Gladioli* die as soon as they flower, and so do old tulip bulbs; and why not flower the tulip for thirty years on the same spot like the Sword lily? The why and the wherefore of the whole question is just a matter of convenience, as I have said.

All bulbs whose roots perish annually with their leaves, as the tulip, may be taken up every year and dried with advantage, as well as for the convenience of the thing; but those bulbs having perennial roots, as the *Amaryllis*, should be disturbed as seldom as possible; indeed, the whole practice hinges on whether the bulb has annual or perennial roots.

ANNUALS.—The best annuals to sow in the early part of June, are *Viscaria oculata*, *Coreopsis Drummondii*, *Virginian Stocks* (white and pink), *Sweet Alyssum*, *Candy tufts* (white and purple), *Calendula hybrida*. A row of the yellow *Eschscholtzia*, sown from the tenth to the middle of June, will keep in bloom from August to the end of October. Except for very early flowering, this does best sown every year, and treated as an annual. Being one of the Poppyworts, it was, at first, supposed to be difficult to transplant, but that is by no means the case; it will easily transplant at any age, and being a perennial, the old or last year's plants of it can be turned into sunny banks, or into poor gravelly or sandy places where few things would grow, or where even seedlings of it would be very difficult to rear, when the ground is wanted for young stock. I believe if you could find foot room for the *Eschscholtzia* on the barren lava of Mount Etna, or any other mount or mountain not too warm for it, it would live and flourish there for years. I once had a tuft of it from self-sown seeds on a natural rock 18 feet above the ground level, and where one could hardly expect a houseleek to live, yet it lasted seven years, and flowered finer than in the rich new borders at the bottom of the rock. It will transplant now if the tops are cut off.

THE CHINESE LARKSPUR (*Delphinium sinensis*) is another carrot-rooted plant which makes a beautiful bed for a long time, and there are different coloured varieties, from blue to white. It is generally used as an annual, because the roots are apt to die in wet ground, or by a hard winter; but the beauty of the plant is not fully brought out the first season. It does best the second or third year, and should have exactly the same way of treatment as the blue *Salvia patens*. Now is the right time to take up for potting the over stock of **DAHLIAS** and **SALVIA PATENS**, either to bloom in the pots, or to fill up places in the autumn beds. Early last April all the old roots of these were to be planted in the open ground, for the convenience of getting them out of one's way when so many irons were in the fire, and here they are now full of sap and vigour, and will no more mind being removed into pots than I would to go and see the Exhibition.

CUTTINGS.—Early in June is the best time in the year to make cuttings of all such *Geraniums* as have done flowering. There is a long list of border geraniums, such as the *Rising Sun* and *Priory Queen*, which people force for coming in early in April and May. These get out of shape after a season or two of this forcing, but still may be brought in very useful. If cut down half-way now, and planted out in the beds or borders, they will begin to bloom early in July, and go on, though not very regularly, to the end of the season. The cuttings from them, and, indeed, all geranium cuttings, from this time to the end of July, at least, do better planted out in the open ground full in the sun. Then come the *fancy Geraniums*, the gayest and most elegant of all the sections of the family, and some of them, as *Queen Victoria*, can only be rooted out of doors any time in summer, so that those who have not the convenience of a hot bed early in the spring to strike off a lot of them, are obliged to resort to out-door cuttings, and the earlier in June they are put in, the more sure they will root. Besides, the whole growing season is now before them, and they will make strong healthy plants before winter. It is a great mistake to consider these fancy geraniums more delicate, or less strong, than

the old sorts, it is the usual mode of growing them which make them appear so. I have seen large bushes of *Ibrahim Pacha*, full five feet high in bloom this spring, and *Queens* half as high again. They do not make such large plants, however, nearly so soon from spring cuttings, because, as soon as they are rooted, and have made a little growth, they get into flower and weaken themselves before they have time to make roots large enough to push them on, and cutting off the blossom buds only aggravates them; all this is got rid of by summer cuttings out of doors, and the plants are in full sap by September, when they are potted. Now the great secret to get them into large bushes, is to start with them from this potting, or, say from the middle of October, then, to the middle or end of next April, they will stand as much stove heat as the pine apple, and a great deal more than would be good for the "fruiters." A well-rooted summer cutting of *Queen Victoria*, potted at the end of September, and confined to one leader, and kept close to the glass in a good working stove, will grow full four feet high before it comes into bloom in the spring, and by June may be cooled down to the temperature of the flower-garden, where, if you plant it in something rich, on a good sheltered border, it will form a bush five feet high, branch out from the bottom, and be in fine bloom by the autumn. A hedge of such plants, a hundred yards long, and planted a yard apart, would be something to look at.

ENOThERA PROSTRATA.—I forgot to say at page 112, that *prostrata* was only the garden name of this *Enothera*. I had it from an excellent practical botanist, under the name *Enothera riparia*, which I take to be, or will be, the book name for it.

ROSES.—All the perpetual roses should be *budded* as soon as possible in June, or else at the very end of September, that the buds may start at once and turn out good healthy plants, and well-ripened shoots before the winter, so that the frost can do them no harm, or else, as in late budding, remain dormant during the winter. June, however, is a much better time to bud them than the autumn months. Those that are now in bloom for the first time from last year's budding, should not be allowed to make many flowers, or to remain long in bloom. If we would but have a little more patience, and be satisfied with just enough to see that the sorts are true to the names or numbers, it would be a great gain to the plants afterwards. When gardeners have a full stock of roses, and have budded from their old plants, they seldom allow them to produce the first buds at all, but as soon as the buds are formed after the middle of May, they stop the shoots, and thus cause the plants to get more bushy, besides husbanding the strength of the plants for a later display. About the turn of Midsummer, if the young plants come up strong, is a good time to cut the ends of the wild shoots down to the very back of the budded parts, so that the cuts may heal over as soon as possible. Let us all bear in mind the experiment I mentioned last year, of causing rose shoots to root in moss before they are cut off, and so get a stock of scarce sorts, or at any rate satisfy ourselves of the practicability of the thing.

YELLOW-BERRIED HOLLIES, and all the variegated hollies, are best increased by budding, and, like the rose, the sooner they are put in in June, the better they will do. The holly with the yellow fruit is much stronger than the variegated ones, and looks far better when worked on a variegated sort; therefore it should not be budded on the top or leading shoot, as in that case it would soon run away with all the strength from the roots, and injure the variegated parts. Here and there, among the side branches, the yellow berries would look remarkably well in contrast with their own green leaves and the variegated leaves of the stock plant, without having much power to rob or injure the bush.

CUTTINGS.—A nice bed for cuttings behind a hedge or wall would come in very useful from this time to the end of August: it should be made of half sand and the other half of any light stuff that one may happen to have, and if patted down with the back of a spade, and an inch of sand put on for a top coat, nothing could be more handy for the rest of the season—one would not much mind a shoot of any thing being broken off by an accident, if there was a bed ready to put in cuttings from it at a moment's notice. Cuttings, and slips, little seedlings, and, indeed, all manner of things, would be easier managed that way, besides getting rid of the bother of having to make up a suitable place for every little thing one may happen to think of through the season.

SCARCE PLANTS.—Some people believe the safest way to deal with a new flower-garden plant is to coddle it in a pot all the summer, so as to make sure of it, and of a stock from it for another season; but that is a great error; few people can give a plant so great a vigour in a pot as it would acquire in a good rich border, and early cuttings from it would keep better over the winter than the old plant—plant out all such at once. D. BEATON.

GREENHOUSE AND WINDOW GARDENING.

FANCY SCENTED GERANIUMS: *Propagation of the more Dwarf and Woody kinds.*—The culture of the first of these desirable plants was given by us last season, and though different growers may have something different in their practice, I am satisfied that if the rules laid down be fairly carried out, success will be secured. In conversing with a courteous intelligent mechanic, the other day, respecting the *how*s as to the working of a piece of machinery, I could not but perceive a change in his demeanour, arising either from an unwillingness to satisfy my inquisitiveness, or an idea that I was too thick-headed to comprehend his explanation. I do not suppose the readers of THE COTTAGE GARDENER have any reason to complain in this respect; but the above, and many facts that have come in my way during the last month, have convinced me, not that the editor and contributors should pay more attention to the wishes and wants of correspondents, but that one and all may at times fall into the error of imagining that their inquirers know more of the subject inquired about than they really do, and that, consequently, the information conveyed is, for those most interested, robbed of half its value. True, it is known that a second inquiry would be dealt with as courteously, even upon the same subject as the first; but then the sometimes honourable, but, in the present instance, mistaken, notion of not liking to be *troublesome*, prevents the application being made, and weeks of examination of the correspondents' column may be endured, in order to find out if any one has been bolder than themselves.

This feeling, based on right principle though it be, is yet fraught with injurious consequences to all concerned. Readers do not get what they want most, and writers are left comparatively ignorant of their desires and wishes. Perhaps in no case is this more felt and seen than in the management, by our window-gardening friends, of the beauties with which I have headed this article. With such cultivators, from time immemorial, the geranium has been an object of attraction. Some delighted in those with beautiful flowers, while others rejoiced in those where the flowers were small and next to inconspicuous, but whose leaves were redolent of perfume—such as the Thyme-scented, the Apple-scented, Nutmeg-scented, and Cut-oak leaved geraniums, plain or variegated, but the scent of which were all, more or less, esteemed in our cottage homes, and the successful

propagating of which was looked upon as a great step in gardening acquisitions. Here *change*, if not *improvement*, as well as in other cases, is rapidly sweeping away the tastes of the good olden times. More variety was wanted in the parlour window. Flowers were considered more beautiful than leaves, however much they were cut, carved, and scented. Odour was not forgotten, but then it was concentrated more into such small-leaved plants as the beautiful *fragrans*, *Citriodora*, and *Prince of Orange*. Largish leaves, scented or not scented, were not absolutely scouted, if associated with other good qualities; and hence the charming *Unique* promises to be a rare favourite in our windows, alike attractive by its deep crimson flowers, the continuity with which they are produced, and the smallness of the pots in which it freely blooms.

As if to suit the window-gardener who rejoices in colour, the fancy geraniums have appeared—compact in their habit, becoming every day more perfect in form and colour, and blooming more profusely and continuously than the larger, commonly called florists' varieties.

But great advantages are not always followed by a reciprocal amount of enjoyment. If they were, these writing gardeners who blab out all they know, and seldom hazard the probable for the practically certain, would be the last to dread the infliction of Lynch law from the disappointed enthusiastic window-gardeners. As it is, it would be pleasanter to be somewhere else, than at times to encounter these our best friends. Unfortunately, along with others, I had recommended many and small plants for producing variety and more extended enjoyment from the window-garden, instead of larger specimens, a few of which would monopolise all the available light. As a natural consequence, young healthy stubby plants were preferred to the older, stunted, less vigorous specimens, and these young plants, curbed at the roots by being kept in small pots, or plunged thickly in boxes or vases, yielded such flowers as never had been witnessed on the old plants. Propagation by cuttings thus became the order of the day. Scarlet geraniums were struck even on south borders, after July had come, and, *welted* though they looked for a time, it was astonishing what nice plants the cuttings made before the autumn hoar frosts set in to disturb them. Florists' geraniums, after having their tissues well-hardened before separating the cuttings from the mother plant, thrived equally and amazingly well. Buoyant with hopeful anticipation, some fine plants of the crimson *unique* were cut down and inserted in a similar manner; but, instead of augmenting, they got less and less, until they well-nigh disappeared from the scene before the potting time in the autumn; others were placed under hand-lights in a north border, and left comfortably alone, but at the end of two months there were only the slightest trace of roots. The small-leaved, hard-wooded, sweet-scented, and the compact firm-wooded *Fancies*, were treated in the same approved manner, and with a similar amount of success. Great were the murmurings that little birds carried to our ears, and fortunate it was that these organs were at safe distance, or they might have had to liquidate somewhat the loppings from established favourites, and all to no purpose. Misfortunes like these, however, are only painful evils, when they act not afterwards as beacons alike to warn and direct. Thus improved, they constitute some of our best, if rather *flagellating* teachers. A great object is gained when it is clearly demonstrated, that though the most of the strong-growing, succulent stemmed geraniums, if suitably prepared, can be propagated in a cold frame under handlights, or even on the open border, any time after July, that all the harder-stemmed, stubbier-growthed, kinds will not thrive under such treatment. In neither case is there a

great departure from the general principle, *that cuttings root most readily when the wood is neither hard nor soft, but in a fortunate medium state*. Exceptions there are, in numbers, when young wood only must be used, and others again in which firm, well-ripened wood can only be trusted with safety; but with these cases, at present, we do not intermeddle. Florists' Pelargoniums are no departure in this respect from the general principle. The good order of the mother plant, from which the cuttings are removed, and our own convenience in securing the simplest mode of increasing the stock, are the reasons that induce us to prefer the middle and end of summer for performing that operation, and *not* because we could not more quickly raise cuttings from more spongy wood at an earlier period. But in this latter case we must resort to slight hotbeds, and handlights, and shading, and frequent dampings—enough to weary the patience of any ardent beginner. The inserting such cuttings in a border in the early part of the season would just be so much labour lost, as in its watery state each slip would be destitute of organisable material to meet the influences of light and air. On the other hand, the chief reason why *Fancies* and firm-wooded, sweet-scented geraniums cannot be successfully propagated in the end of summer, if they have been well managed, is, that there the growing has given place to the accumulative process, and the wood has become too indurated for the hasty production of roots. I say *hasty*, because, if proper conditions are secured, along with a patience that will not tire, plants will ultimately be formed, but at a vast sacrifice of *time*. Thus cuttings of *Unique*, *Fancies*, and such kinds as *Citriodora*, &c., inserted in a shady border in the end of July and in the beginning of August, with even the advantage of a light put over them, were ten or eleven weeks before they showed languid signs of rooting. Small pieces of the tips of the shoots, where they could be spared, or where shortening was desirable, taken off in April, from an inch and a half to three inches in length, cut clearly through at a lower joint, where the wood was just a little firm, the ends dried in the air for a few hours, and then the cuttings inserted round the sides of well-drained pots, and plunged in a mild, sweet hotbed of a medium temperature of from 50° to 60°, and slightly shaded and syringed, produced beautiful rooted plants in less than a fortnight. Inserted firmly in a border, and rather larger cuttings used any time after the middle of May until the end of June, with a handlight over them, they generally would root in somewhere about three weeks. In June, strongish cuttings, but not too hard, may be planted out in a border, making drills, and filling up before planting with any light sandy material. I have, however, even after resorting to shading with branches, &c., seldom succeeded with these on the open border in any thing near to the same degree as with the older florist kinds. Where our friends fond of these ornaments for their window, have no pit or frame, the handlight is their next best resource. To attain, even here, the acme of success, the light should not be set upon the ground, but a foundation of at least half a dozen of inches of clinkers, coal-ashes, &c., *above* the level of the soil, salt sprinkled amongst them to prevent the access of worms, and over that placed rough soil, and then finer, for the reception of the cuttings. Without the handlight, the best substitute is to place the cuttings in small, well-drained pots in the window, so that they may be shaded by the other pots in hot sunny days, and even in extreme cases set down on the floor for two or three hours. Mind, I have spoken of the propagation of these plants on the supposition that they were receiving fair treatment *in pots*. If you plant them out of doors in summer, and attempt to propagate from them *then* in August or so, your success will be as dubious, not because the wood is too ripe, but from the very opposite cause—its sponginess and

luxuriance. If circumstances should *compel* you to try cuttings even from such plants, choose the stunted side shoots, and not the points of the luxuriant ones. Much farther trouble will, therefore, be avoided by getting cuttings inserted before June has run a great part of his course.
R. FISH.

HOTHOUSE DEPARTMENT.

EXOTIC STOVE PLANTS.

PLANTS WITH VARIEGATED LEAVES.—There are, in our stoves, a considerable number of plants, of which the leaves are so beautifully varied in colour, as to render them objects of great admiration, even when the flowers are, comparatively speaking, insignificant and uninteresting. It seems to be a rule almost without exception, that if a plant has beautifully coloured leaves, its flowers are deficient in colour and form; but there are some exceptions to this rule—the *Gesnera zebrina*, for instance, and some others of the same tribe. Having been lately very much pleased with some well-grown specimens of plants with various colours and charming tints in their leaves, we have thought that a few examples and descriptions of them would be acceptable, and there is this in favour of such plants whose foliage is persistent (evergreen would be an improper term), that their beauty is unlike that of flowers persistent also,—they are beautiful at all times and in all seasons. There are a few persons who object to variegated leaves, because they consider them as indicative of disease; but when the variegation is regular and constant, and the plant continues to grow and produce healthy and large foliage, we opine they can scarcely be considered unhealthy.

The *Aucuba japonica* is a case in point. It always appears more or less variegated, yet who will say that it is diseased? Besides, the more this fine hardy shrub is exposed to the light, which is, in most cases, considered the cause of the beautiful green colour of leaves, the more increases very considerably the amount of variegation, and still the shrub flourishes, all other points necessary to the well-being of even green-foliaged plants being present. And this holds good with all permanently variegated plants, whether we refer to the beautifully *Striped Holly* of our shrubberies, or the finely-tinted foliage of the *Oroton* of our stoves. Both continue to perform, in a healthy manner, all the functions of development of stems, branches, and leaves, and even produce flowers and seeds. It is, nevertheless, quite true that blotched, or pale-coloured, or yellow leaves, in some cases indicate disease, as in the *Camellia* tribe, but such instances do not apply to what we have termed *permanently variegated plants*. There is generally a cause and a remedy for such temporary deficiency of the usual colour. The cause will be found either to be diseased roots, too much water, or a deficiency of light, and the remedy will be the removal of these causes of deficiency of the green colour. The observer, then, need not think, when he is admiring the beautifully tinted or varied foliage of the plants we are about to describe, he is looking upon a poor, sickly, diseased thing, that instead of yielding delight, ought to be looked upon with pity or aversion.

ANECTOCHILUS SETACEUS, and its varieties. We have already described the inimitable and truly exquisite leaves of this most lovely-foliaged genus at page 224, vol. iii., of this work. Though this is a native of Ceylon, and generally grown in the orchid house, it will thrive well in the warmest part of a common stove, provided a bell-glass is kept constantly over each plant.

ACHIMENES PICTA (Painted A.).—A beautifully variegated plant, native of Mexico. The leaves are of a deep green, with lines of white intersecting each leaf. It begins to grow during the early part of summer, and continues in beauty till Christmas. It has beautiful

flowers of a bright orange, striped with reddish brown. The culture is the same as the rest of the genus.

ÆCHMEA DISCOLOR (Various-coloured A.).—The leaves of this plant are green on the upper side, and a rich chocolate purple on the under side, rendering it always a beautiful object. *Culture*.—Stove heat, 65° in summer, and 55° in winter. Flowers fine, of a scarlet and purple colour. *Soil*.—Loam, peat, and leaf-mould, with some sand. It will grow best if plunged in a warm bed of tanner's bark. Increased by suckers.

Æ. FULGENS STRIATIFOLIA (Striped-leaved Dazzling A.).—Foliage narrower and longer than the last, and beautifully striped with reddish brown. Culture the same as the last.

ASPIDISTRA VARIEGATA (Striped-leaved A.); Japan. The colours sport considerably on the leaves of this plant. Sometimes one half of the leaf will be white, and the other half green; at other times the two colours will be regularly alternate, and sometimes the white will be in broad stripes, and the green very narrow. Flower uninteresting. *Culture*.—Sandy loam, with a moderate heat. Being a persistent, herbaceous plant, it requires water all the year. Increased by division.

ÆSCHYNANTHUS ATROSANGUINEUS (Dark-bloody-leaved A.); Java. The colour of the under side of the leaves is of a rich purple-red colour, which gives the plant a fine appearance. *Culture*.—Sandy rough peat, in baskets hung up in the stove. This method shows the colour of the leaves off to the greatest advantage.

Æ. ZEBRINUS (Zebra-leaved A.); Java. The leaves of this species are prettily striped with purple, on a green ground. *Culture* the same as the preceding. Increased by cuttings readily in sand, in heat, under a bell-glass.

BARTOLINA MACULATA (Spotted-leaved B.); South America. A persistent herbaceous perennial, with dark green, glossy leaves, blotched towards the lower part of the leaf with broad longitudinal spots of white. A beautiful new plant, with a head of small rose-coloured flowers. *Culture*.—A warm stove, in peat, loam, and leaf-mould. A very desirable plant.

BEGONIA.—In a recent number we have given a description of the party-coloured leaves of several species, and to that we must refer our readers.

BILLBERGIA ZEBRINA (Zebra-striped B.); South America. A pine-apple looking plant, with long green leaves, barred with spots of white. When in health, and a fine specimen, this is a noble looking plant. The flowers are surrounded with large pink bracts; they are blue and pale yellow, produced on a large drooping spike. Culture the same as for *Æchmea*.

CALADIUM BICOLOR (Two-coloured C.); Madeira.—A splendid foliaged plant. The leaves are frequently a foot long and six inches broad. The colour is in the centre of a rich dark scarlet; the veins are of a light crimson; the whole shading off towards the edge into a beautiful pale green. *Culture*.—Moderate heat, 70° when growing, and 60° when at rest. *Soil*.—Rich compost formed of turfy loam two parts, and well-decomposed dung one part; potted into rather large pots, and placed in pans of water when growing. In winter, during the season of rest, the plants should be kept tolerably dry, but not quite so. If too dry, they will become mealy and perish. Increased by division. The plants, when growing, send up side shoots, or slips, which soon put forth roots; as soon as these are perceived take the slip off with a sharp knife; plant them in small pots, and place them under a hand-glass in heat. They will soon put forth roots sufficient to enable them to bear the full light and heat of the stove.

C. VARIEGATUM (Spotted-leaved C.); South America.—The leaves are light green, with broad blotches of cream colour. Culture the same as *C. bicolor*.

CALATHEA ZEBRINA (The Zebra Plant, commonly so

called).—This is often, but erroneously, called *Maranta zebrina*. The leaves are of bright green, with broad purplish stripes beautifully shaded. A plant that every body admires. The flowers are dull purple bracts, not particularly handsome, the foliage being its great attraction. *Culture*.—Soil; a rich compost of turfy and leaf-mould in equal parts; pot freely and often, and give plenty of water when the plants are growing, but moderate supplies in winter. It is a persistent herbaceous perennial, and, therefore, will not endure complete drought in winter.

CROTON PICTA (Painted C.); East Indies.—The leaves of this plant are more like the colour of flowers than leaves. They are reddish crimson, pale yellow, and green, blended and mixed together in a most fantastic and uncertain manner. Sometimes the bright colour prevails with only a shade or two of green; at other times the pale yellow, or almost white, is predominant; and in some parts of the plant the green colour is most abundant. It is one of our finest variegated stove plants. It is a shrub that often attains three or four feet in height; flowers small and inconspicuous. *Culture*.—Soil; a light compost of turfy loam and peat in equal parts is proper for it, and the warmest part of the stove. Water moderately. Increased by cuttings placed in white sand, under a bell-glass, and plunged in a bark-bed.

C. VARIEGATA (Variegated C.); East Indies.—The variegation of this species differs materially from the preceding, inasmuch as there are only two colours, and they are nearly equal. The ground colour is bright green, striped and blotched irregularly with bright yellow; a very handsome plant if not grown in too great a heat, or too much shade. There is a variety with the leaves much longer and narrower, named *C. variegata angustifolia*. Culture the same as for *C. picta*.

T. APPLEBY.

FLORISTS' FLOWERS.

MR. GLENNY'S REPORT OF FLORICULTURAL MEETINGS.

THE meeting of *The National Floricultural Society* on the 22nd was tolerably well attended, and there were established favourites in Geraniums, Cinerarias, Pansies, and other florists' flowers. Among the seedlings, many of which were of secondary, or even inferior character, there were several rather interesting.

In *PANSIES*, *Hunt's Pandora*, a very smooth edged well-formed variety, with light yellow field, puce upper petals and border. The only real fault that is conspicuous is the yellow on the side petals being rather paler than that of the bottom. This was awarded a certificate.

Hunt's Cardinal Wiseman.—A variety that will, perhaps, be seen better; but young and crumpled blooms were not adapted to judge from. The colour is extremely rich, and, except the crumpling, there is something very promising, though it could not be noticed in that state.

In *CALCEOLARIAS*, Mr. Gaines had several not much of an advance on scores already out. *Circularity*, of the commonest colour—yellow and brown—but a good deal more inflated than the average run of these flowers, and free from ribs. *Antiope*, much of the same character, differing a little in the marking, but of the same general complexion.

In *TULIPS* there were several breeders and two or three broke flowers. A Rose-breeder named *Juliet*, from Mr. Willison, of Whitby, was desirable in form, texture, and colour. This was commended; the others were not worth particular notice.

In *CINERARIAS*, a certificate was awarded to Mr. Henderson for *Rosalind*, a blue-edged flower, but the notch was too conspicuous to make it a favourite. It was this fault that deteriorated *Lady Hume Campbell* of last year. Mr. Ambrose, of Battersea, had a flower called *Formosus*—white centre, crimson edge, broad petals, reflexed, and a showy bedding

or market flower. It was commended as such by the censors.

Mr. Wynniss had a collection of *MIMULUS*, among which *Prince Albert* was the best. It was speckled with dark brown on a fine yellow ground, and of middling form: worth growing as an ornamental plant.

Many Azaleas, Rhododendrons, Gloxinias, and many other plants, were sent for decoration; but the most conspicuous were two or three yellow Rhododendrons.

The meeting at Exeter Hall, on the 27th, of *The London Floricultural Society* produced a goodly show of *TULIPS*, exhibited for prizes in class showing. Upwards of a hundred blooms were staged, but the only seedling was a sulphur-coloured self, by the Secretary; a gay, middle row flower, of which a couple might be appropriated very well. It is beautifully pure, but the outer petals very much smaller than the inner ones, and, therefore, not a show flower. In class-showing among amateurs the first and second *Rose Tulips* were taken by Claudiana; the third, *Triumph Royal*. In *Byblomens*, 1 David, 2 Violet Quarto, and 3 Holme's King. *Bizarres*, 1 Fabius, 2 Brown's Ulysses, 3 Polyphemus. *Nurserymen*, 1 Optimus, 2 Polyphemus, 3 Rufus. *Rose*, 1 Chedrona, 2 Triumph Royal, 3 Brulante. *Byblomens*, 1 Rossius, 2 Dutch Superb en Noir; no third. *PANSIES: Amateurs (selfs)*, 1 Sambo, Mr. Treacher; 2 Rainbow, Mr. Lockner; 3 Lucy Neale, Mr. Hunt. *Yellow grounds*, 1 Addison, Mr. Hunt; 2 Zabdi, Mr. Lockner. *White ground*, 1 Duchess of Rutland. *Nurserymen (selfs)*, 1 Moor of Venice, 2 Lucy Neale, 3 Duke of Perth. *Yellow ground*, 1 Sir John Franklin, 2 Mr. Beck, 3 Junius. *White ground*, 1 Mrs. Beck, 2 Duchess of Rutland, 3 Almazor. Mr. Bragg was the winner of all the Nurserymen's class of Pansies. Mr. Hunt, of Wickham, took all but one of the Tulip prizes in the Amateur class, which one, the second *Rose*, was won by Mr. Weare. Mr. Batten took all the Nurserymen's class.

SEEDLINGS.—*Pandora*. Mr. Hunt obtained a first class certificate for this *Pansy*. It is the same flower that obtained the like honour at the National, and has been already described. *Rotunda*.—Mr. Hunt obtained a certificate, one of the judges expressing, however, his doubt whether the colour would stand. This flower has a white ground, and rather a washy shaded blue border; the eye, except the few radiating stripes, is of the same washy colour; the lower petal does not lay kindly; but we consider the blooms not in their best condition. We quite agreed with the doubt expressed by one of the judges.

CINERARIA: Lockner's *Surprise*. Very symmetrical and pretty for a self, but too much scalloped on the edge; it nevertheless had a certificate. If this was right there will be hundreds this year quite as highly deserving that distinction. It is one of those shaded blues which are so prevalent.

No other seedlings worth especial notice were exhibited.

FLORISTS' FLOWERS RECEIVED.

(*C. K. S., Edinburgh*).—A white *Cineraria*, full size, very pure white. Obtuse broad petals, inclined to cover each other, but if displayed, as in some flowers, forming a fine circle. The petals rounded back and ribbed; disk light lilac; upon the whole, an acquisition, although we have two fine and distinct whites this season already, but this is like neither. Has it been shown under a name? because we ought to know it, or give it one.

(*Mr. Hunt*).—A small half-grown *Pansy*, called *Iris*, in colour exquisite and pure, its novelty very promising; we can only compare it to black and gold; but let it be grown well, and send it in condition. *Emperor*.—A promising novelty; clear straw-coloured ground, dark border, but certainly not in condition.

(*E. W.*) **CINERARIA.**—Lilliputian. Very pretty, tipped flower; fine, close, even head; bloom white, with well-defined tip; too small to be a great favourite.

(*J. T. L.*) **CACTI.** Nothing more than slight variations from *Ackermanii*; certainly not worth naming. G. G.

FLORISTS' FLOWERS AT THE CHISWICK SHOW.

ROSES IN POTS.

All were really superb, and we merely particularize a few of the best.

AUBERON, rose, hybrid perpetual. (*Terry. Rosier. Paul.*)
AUGUSTINE MONCHELET, pale rose, hybrid perpetual, very excellent. (*Rowland.*)
BARON PREVOST, deep rose, hybrid perpetual. (*Terry. Paul.*) Magnificent blooms, six inches across. (*Rosier.*)
BLAIRII No. 2, rose, hybrid China. (*Rosier. Francis.*)
CHE'NE'DOLE, crimson, hybrid China. (*Francis.*)
COMTE DE PARIS, blush, tea-scented China. (*Paul.*)
COUNTESS MOLLE, rose, hybrid Bourbon. (*Terry.*)
COUP D'HEBE, blush, hybrid Bourbon. (*Francis.*)
DUCHESS OF SUTHERLAND, rose, hybrid perpetual, extra fine. (*Lane.*)
ELIZA SAUVAGE, pale yellow, tea-scented China. (*Francis.*)
FULGORIE, China. (*Terry.*)
GEANT DES BATAILLES, crimson, hybrid perpetual. (*Rosier. Lane.*)
LA REINE, pale rose, hybrid perpetual. (*Francis.*)
LEMARQUE, white, Noisette, very fine. (*Francis. Lane.*)
MADAME DE ST. JOSEPH, cream, tea-scented China. (*Lane.*) Extra fine. (*Paul.*)
MRS. BOSANQUET, white, China. (*Terry.*)
NINA, cream, tea-scented, very fine. (*Terry.*)
NIPHETOS, white, tea-scented China. (*Paul.*)
PAUL PERRAS, deep rose, hybrid China. (*Francis.*)
SOUVENIR D'UN AMI, blush, tea-scented. (*Lane.*)
WILLIAM JESSE, rose, hybrid China. (*Paul. Lane.*)

Amateurs.—First prize, Mr. Terry, gardener to Lady Pullen, of Youngsbury. Second Prize, Mr. Rosier, gardener to T. Bradbury, Esq., Streatham. Third prize, A. Rowland, Esq., Lewisham.

Nurserymen.—First Prize, Mr. Francis, Hertford. Second prize, Messrs. Paul, Cheshunt. Third prize, Messrs. Lane, Berkhamstead.

FANCY PELARGONIUMS.

ANAIIS (*Ambrose*). DEFIANCE (*Ambrose*). FORMOSA (*Ambrose*). HERO OF SURREY (*Ayres*). IBRAHIM PACHA (*Ambrose*). JENNY LIND (*Ayres*). MADAME MEILLEZ (*Ambrose*). MAGNIFICA (*Ayres*). PICTUATUM (*Ayres. Ambrose*). QUEEN SUPERB (*Ayres*). STATUISKA (*Ayres*).

First Prize, Mr. Ayres, nurseryman, Blackheath. Second prize, Mr. Ambrose, nurseryman, Battersea.

CAPE PELARGONIUMS.

ARDENS, BICOLOR, BLANDFORDIANUM, ELEGANS, FULGIDUM, and HOLOSERICEA, were exhibited by Mr. Rosier, and obtained the only prize.

CINERARIAS.

ANGELIQUE (*Robinson*). ANNIE (*Robinson. Fancourt*). BESSIE (*Robinson. Fancourt*). CERITO (*Fancourt*). FAIRY RING (*Robinson*). FLORA MCIVOR (*Robinson. Fancourt*). NEWINGTON BEAUTY (*Robinson*). WELLINGTON (*Fancourt*). WEDDING RING (*Fancourt*).

First prize, Mr. Robinson, gardener to J. Simpson, Esq., Thames Bank, Pimlico. Second prize, Mr. Fancourt, foreman to Mr. Cant, nurseryman, Colchester.

PANSIES.

For the first time these were exhibited in pots (8-inch), and the only collection was shown in good condition. Among them the best were POLYPHEMUS, QUEEN OF ENGLAND, LADY CARRINGTON, OPHIE, ELIZA ANNE, MR. BECK, and JUVENATA. The exhibitor, Mr. Bragg, florist, Slough, obtained the first prize.

AURICULAS.

Mr. Wilmer, nurseryman, Sunbury, had an extra prize for a collection in fine condition; among its best beauties were WATERLOO, WILLIAM THE FOURTH, FAIR MAID, LOVELY ANNE, EARL GROSVENOR, COLONEL TAYLOR, MORNING STAR, MRS. SMITH, and SQUIRE PELHAM.

FLORISTS' FLOWERS CULTURE.

THE PANSEY,—Is worthy to be placed amongst the best of our bedding-out plants, and we wish our learned friend in such matters (Mr. Beaton) would try a bed or two of the self-coloured ones. They produce the highest and brightest colours, from pure white to almost black, and would, we are quite sure, fill up many a blank at seasons of the year when effective colours are highly to be desired. Just now they require a more than common attention to keep them up to the mark of perfection. Dry weather and a hot season will quickly cause them to fail to produce fine blooms fit for the exhibition table. To keep them in health of bloom, no seed should be allowed to ripen, or even to form, on the plants that are to produce winning flowers. Encouragement to produce such blooms should be given in the shape of a thin mulching of very well-decomposed manure, spread equally all over the bed. Long straggling shoots should be carefully bent down to the ground and layered, that is, such long shoots should have a few of the lower leaves trimmed off, and an incision made half way through each stem, and then pegged down, and the cut

part covered with some finely-sifted, light, rich loam, leaving the ends of the shoots out of the soil. These layers will quickly root, and form so many new plants that will flower much stronger and longer than if left to grow wild, and, besides this, the centre of each plant will send forth fresh shoots, and these will flower late and finely. We have repeatedly acted upon this plan, with the greatest success. The layers we found made excellent plants to pot and store through the winter, and bloomed in these pots well the following season. The council of the Horticultural Society have offered prizes for florists' flowers in pots, acting, no doubt, upon the idea of the success that has attended the culture of roses in pots for exhibition purposes. If florists intend in future to compete for the prizes offered for Pansies in pots, we would seriously advise them to try the method we have recommended of layering their plants, and potting the layers, when well established, in the pots they intend to exhibit them the next year. We feel confident success in the greatest degree will ensue from the experiment. The layers for such a purpose should be made about July, and be taken off in September, potted, and placed in a cold situation till the middle of November, then placed under a cold frame, protection being given only from heavy rain, snow, and frost. In early spring they will be found strong, healthy, and ready to bloom towards the end of April. Plants in bloom now, should be protected from the sun in bright clear days. Thin canvass will be found the best protective. Water will be necessary in dry weather; and when it is applied, let it be effectual, not the dribbling watering too often given, which really does more harm than good, but a regular good soaking, that will reach down to the deepest fibre. One such good watering, accompanied by the mulching mentioned above, will do more good than twenty sprinklings. Should the soil of the bed appear caked, hard, and cracked, stir the surface with a short three-pronged fork, carefully preserving the roots; previously to watering it effectually, or, which is better, water well once, allow the surface to become dry, and then use the fork, and afterwards give the heavy dose of water. This will encourage the plants to grow prodigiously and produce the finest bloom.

Cuttings may now be taken off the plants. Previously prepare a piece of ground in a shady situation, not under the actual drip of a hedge or trees. The way to do this, is to remove a portion of the soil where the cuttings are to be placed; sift some fresh light loam and spread it over the surface, then cover this with a layer of fine sand; procure some hand-lights, square ones are the best, fix the first at one end of the prepared piece of ground, pressing it down to make a mark; lift it off again and place the cuttings within the mark. The cuttings should be taken from the weaker shoots of the plants, the strong branches being too coarse and sappy to strike readily, and are apt to damp off immediately. Number each lot of cuttings, so as to be able to know them again when they are fit to be planted out. When a hand-light is full the cuttings should stand just clear of each other; give a gentle watering to settle the earth firm to each cutting, then place on the hand-light, and proceed to fill the next. When all is finished, shade pretty closely for a few days from the light of day, and where a callosity is formed at the base of each, allow the light to reach them, but still shade them from the sun if his rays can reach them after eight o'clock in the morning. Observe whether they flag if the sun shines upon them for an hour or two. If they do not, roots will be forming, and then they may have the full light, and a little air given to them daily. This is to prepare them for planting out when the roots are fully formed.

T. APPLEBY.

THE KITCHEN-GARDEN.

Angelica. Presuming a sufficiency ere this to have been secured for preserving, the bloom stalk, to prevent exhaustion, should be carefully taken off, with the exception of a plant or two left for seed. At the same time encouragement should be given by keeping the surface of the earth well open, and adding pretty free applications of liquid manure. With respect to *Angelica* seed, we find the most certain method of obtaining plants is to sow the seed as soon as ripe; good strong plants will then be secured by the autumn, when the desired quantity may be put out on a well-prepared piece of ground. If the soil be good, deep, and rich, and a loose surface is maintained, with the assistance of occasional applications of liquid manure, very fine transparent stalks will be secured the following spring.

Celery. To secure a heavy crop of good sized *Celery*, say, upon an average of from 4 lb. to 6 lb. per plant at taking up time (which is about our average size), the piece of ground should now be chosen for the principal crop, and should be well manured and trenched to the depth of from twenty to twenty-four inches, the quality of the subsoil being the guide:—the soil should, of course, be left in rough ridges. We generally choose our early cauliflower or early cabbage ground; either of which, by previous liberal trenchings, surface scarifying, and liberal soakings of liquid manure, being in pretty good condition; but the spinach ground, early pea or any other spare ground, well managed, will, of course, answer the purpose. When the planting season arrives, we measure out the ground into five or six feet beds, stretch the line across the ridges from end to end, and, with a shovel, cast out right and left a few inches of the soil into what is to be the earthing space, which space is also left four or five feet wide between each *Celery* bed:—the width of this is regulated according to the richness of the soil, the season of planting, or the extent of ground to be spared. The width, however, is not very particular, so that it be sufficient to provide the desired quantity of earth for bleaching, and security against winter frost, as the space, whatever it may be, is, of course, at once cropped with useful vegetables in variety; the centre part with late *Cauliflower*, *Cape Brocoli*, or *Coleworts*, and the outsides, next the *Celery*, with *Lettuce*. Indeed, we often sow late *Dwarf Peas* in the centre of the trench, such as the *Imperial Blue*, *American Dwarf*, *Fan Peas*, &c., and the foregoing crop on each side. The *Celery*, of course, is planted crossways in these shallow trenches in beds, at the distance of from eight to ten inches, or even a foot. If early, and intended to be grown very large, an immense weight of *Celery* may be secured from a small space of ground, well managed, upon this principle; and for winter crop, what an extent may be thus easily and inexpensively secured against wet or frost. The old single row system of culture, where still carried out by those who require large supplies, now puts us in mind of the old things long laid by in the corner of curiosities, but cultivating *Celery* upon the foregoing system economises the matter in various ways, for not only is space saved, but manure also, if desirable to confine it only to the width of the bed:—the application of water or liquid manure, too, and the necessity of all after-labour is so considerably diminished, that it is worthy the attention of all cultivators. One consideration with respect to the planting of *Celery* is, that at all times care should be taken not to plant deep, but to keep the seed leaves and collar of the plants above the surface of the soil; and to produce fine *Celery* it is necessary to make a good preparation with regard to soil, manure, and good plants, and never to allow it to get dry. Continue to prick out young plants.

ROUTINE WORK.—Sow late dwarf kinds of *Peas* on

the shady side of sloping banks or borders, as well as *Garden Beans*, and plant *French Beans* on the sunny side. This is a good season for sowing a full crop of *Cauliflowers* and *Cape Brocoli*. Another sowing should be made of *Parsley*, and the growing crop well thinned. Continue to sow *Turnips* in succession. Commence planting out between the early crops of *Potatoes*, young plants of *Drumhead Cabbage*, *Cabbage* or *Colewort plants*, *Savoy*s and *Kale*. These will have rooted, and be ready for a growing start by the time the *Potatoes* are taken up; and by good after-management in scarifying and keeping a loose, clean surface, a valuable winter crop may be obtained.

JAMES BARNES.

MISCELLANEOUS INFORMATION.

RESULTS OF BURYING BEES.
WINTER 1850—51.

Number of hives and description of them; whether swarms, casts, old hives, or preserved bees.	Probable age of queen. Has she ever led off a swarm.	Whether buried in the ground, and in leaves or otherwise, and at what depth.	What method of ventilation, if any, was adopted.	Date of interment, and state of weather.	Weight of contents of each hive on interment, as far as could be ascertained.	Nature of soil and aspect (North best).	General character of the winter.	Date of disinterment.	Condition of hives on disinterment.	Weight of contents on disinterment.	Perceptible loss of each hive.
No. 1. A second swarm of 1849.	From brood of 1850.	Placed on lime-ash floor, covered with earth one foot thick.	No ventilation.	29th Nov., 1850. Frosty morning	Gross weight, 21 lbs.	Shed facing the south.	Remarkably mild and wet.	29th March, 1851.	Very dry and sound.	Gross weight, 15 lbs.	6 lbs.
No. 2. A swarm from No. 1 in the first week of July, 1850.	Probably two years old.	Ditto.	Half-inch pipe from entrance.	Ditto.	Gross weight, 11½ lbs.	Ditto.		Ditto.	Ditto.	Gross weight, 8 lbs.	3½ lbs.
No. 3. A second swarm in 1849.	Brood of 1850.	Ditto.	Half-inch pipe from entrance.	Ditto.	Gross weight, 17½ lbs.	Ditto.		Ditto.	Ditto.	Gross weight, 9 lbs.	8½ lbs.
No. 4. A swarm from No. 3 on the 8th July, 1850.	Two years old.	Ditto.	No ventilation.	Ditto.	Gross weight, 9½ lbs.	Ditto.		Ditto.	Ditto.	Gross weight, 6 lbs. 3 oz.	3½ lbs. 5 oz.

FURTHER OBSERVATIONS.

No. 1. Bees living, and commenced to carry in pellets of wax on their legs the fourth day after disinterment. The stock, however, is much weakened in numbers, from the great quantity found dead on the bottom board in a putrid state.

No. 2. Living, and doing very well; commenced to carry wax the second day after disinterment.

No. 3. When disinterred, a small portion of bees living and lively, but since dead; honey left in combs.

No. 4. Bees in a very weak state, and never recovered; all dead by the third day after disinterment; no honey left.

N.B. Number 1 and 3 were strong stocks, full of bees, and the large mass of dead bees found in each of them was enormous. The weight, on an average, of the empty hives, from 3 lbs. to 4 lbs. each.—A. Mc KELVIE, *Stevenstone, Torrington, Devon*.

POULTRY KEEPING.

Your valuable correspondent, *Anster Bonn*, lays down such excellent rules for fowl keeping, as to leave but little room for further remarks; yet, I beg to offer a few words on the subject, in the hope they may act as a stimulus to those who have not yet kept any, to begin to do so, as a small space will suffice. I have kept a few for years, successfully, and at this time I have six hens, small Bantams. I wish I knew the name of the breed, they are as black, but not quite so large, as a raven, but strange, they sometimes produce speckled chickens. These six hens have laid this year, viz., from the 1st of January, to this 31st of March, 184 eggs. They may be beaten by some, but I think very few. A gate-keeper at a crossing on the Eastern Counties line, within one hundred yards of me, keeps one hen, a fine specimen of the common fowl, two years old, and he told me to-day this hen laid upwards of 150 eggs last year. I am sure there are hundreds of cottagers who might keep two or three, which would cost but little, and would be the means of procuring for them many little articles of daily consumption, of which, if they are not obliged to do entirely without, get but a scanty supply. The shopkeeper with whom they deal, would always take their eggs in exchange for goods. I am not an advocate for keeping old hens, I serve them as I do my strawberry plants, turn them out at three years old. Any older than this may do very well for sitters, but are not worth keeping for layers. Four of mine are two years old, and two one year old this spring. The two were hatched in April, last year, and before the end of November, had laid thirty eggs between them. All who wish for strong fowls, should, if possible, get their chicks off before the end of April. I have always found later broods turn out sickly. As I do not intend setting any of my hens this year, I will endeavour to keep a correct account

of the produce, and give the result at the end, for the benefit of the million.—J. CROPLEY, *Great Shelford, Cambridge*.

BEES.

I WILL once more trouble you with a few observations on bee management, in reply to "A Country Curate" and "A Country Solicitor." I agree with the latter in his remark that difference of locality must produce very different results; it is, therefore, desirable that a writer on this subject should state the locality he treats of. His hive (as regards shading) was placed under a fir tree impervious to the rain. Was not this exactly the situation to encourage moth? than which the honey bee has not a more powerful enemy. He gathered up the bees which fell near the hive, and put them therein through a hole at the top of the hive. Here he was allowing a current of air to pass through the hive: it is a well known fact, that bees endeavour to close up every crevice in their habitation except the entrance, and, no doubt, to procure a sufficient temperature for their well being. This alone, particularly at the early part of the season, was sufficient to prevent them from progressing; but may be there were other reasons—the description of fir tree, as respects resin, or the *Campanule* wasp, which delights to sling his hammock in the fir tree. I have now a hive, which stands in the shade, well covered with a straw hackle, but quite exposed to wind and rain; it commenced work on the 15th of February, and I am persuaded that it did not contain more than four pounds of honey when placed in that situation; it appeared perfectly free from moth, has never been fed, except with a small quantity of brown sugar in a feeding box below; although the air is still very cold here, yet it appears in good health, as appears by visitors to the crocuses in my garden.

With respect to purchasing hives, I hold the opinion that they should be young, clean combs, and free from moth, never in an old hive, and if in March they have four or five pounds of honey in store, it is quite sufficient.

I acknowledge myself quite at a loss to know what is meant by artificial swarms. If it is to procure a premature swarm, the only way is to divide the combs perpendicularly, so as to take away a portion in which is a queen's cell sealed up, and, by a distant removal, the nurses may remain till the said queen's cell produces a young queen bee; but to divide the hive horizontally, is next to impossible to make two out of one, as it will ever be found that the queen's cells are in the lower part of the hive, and on being much disturbed they will all follow the old queen. Let me tell "A Country Curate," that a much better plan is, to await till he can observe one or more caps from the queen's cell lying beneath the hive; or, another certain sign which I could tell him (if a first swarm), that everything is ready for a separation of the community, weather permitting, he may then, by artificially producing that which is the last cause of the turn-out, enjoy the sight of a natural swarm of much more value than in prematurely dividing the stock.

If his object is only to obtain the honey and preserve the lives of his bees, let him adopt mine, which has ever been denominated the "storying principle;" or, taking the upper box or hive, and leave the lower habitation, without driving from one hive to another, as though the poor bees had no feeling.

As to locality, mine is Barnsley, in Yorkshire, by no means an early or a warm climate; and around me the gooseberry-bush is rapidly giving way to the factory-chimney. I have still one consolation, and that is, I am not near a brewery, as I was at Middlewich, when a brewer brought me nearly a quartern-measure of bees which he said belonged to me, adding that "he had taken the drunken *towads* out of the cooling wort."

S. J. R.

TEA-SCENTED ROSES.

AMATEUR cultivators of these roses who, like myself, reside within a few miles of the metropolis, and are compelled necessarily to grow them under glass in pots, find them fail after a season or two. We may be successful with most kinds of plants, but these prove more than our match. With great care, I get at first, certainly, very satisfactory specimens, but find it impossible to keep the plants in the same state, and the blooms speedily deteriorate. Before giving them up, I made a new attempt, which has been quite successful. I planted about fifty half-standards and dwarfs of *Souvenir d'un Ami*, *Eliza Sauvage*, *Adam*, *Devoniensis*, &c., in the autumn, in a well-prepared compost, and erected a low span-roofed house over them, with glass sides to the ground, and side windows for ventilators. It answers admirably; the plants are looking remarkably healthy and promise well. The shoots are most vigorous, and are covered with buds.—W. G., *Stoke Newington*.

TO CORRESPONDENTS

*** We request that no one will write to the departmental writers of THE COTTAGE GARDENER. It gives them unjustifiable trouble and expense. All communications should be addressed "To the Editor of The Cottage Gardener, 2, Amen Corner, Paternoster Row, London."

BOTANICAL ARRANGEMENT IN BORDERS (*Miss M. B. A.*).—We cordially agree with you, that with a view to the encouragement of the study of hardy plants in natural groups, or according to natural classification, specimens from the different groups should be procured and cultivated by amateurs and others in their "mixed borders." This has been our own idea for many years, as to the true use of what are called "herbaceous plants," and with this impression we have sent your letter to one of our contributors with a request to aid you. Meantime, our *Cottage Gardeners' Dictionary*, is the best and cheapest reference to suit you; indeed, it is the only catalogue in our language in which an attempt is made to separate the useless from the beautiful.

CALYSTEGIA SOLDANELLA (*Ibid.*).—Can any of our readers procure a rooted plant of this British bindweed for our correspondent?

CALYCERS (*Ibid.*).—There are some hardy, or half-hardy, plants in the obscure Order Calycers (Calyceraceæ), but, as far as we are aware, there are none of them in cultivation. All that are described of them, inhabit the southern parts of South America, particularly in South Chili.

WINTERGREENS (*Pyrolaceæ*) (*Ibid.*).—They are all hardy, and the easiest of them to be procured are *Pyrola* and *Galex*—plants not uncommon.

FIR RAPES (*Monotropaceæ*) (*Ibid.*).—They are parasites which grow on the roots of trees. We are not aware of any attempt having been made to cultivate them.

DODDERS (*Ibid.*).—They grow freely from seeds in the usual way, and as they rise from the seed-pot they become parasites, and attach themselves to the nearest plant.

NECTARINE LEAVES BLIGHTED (*P. D. D.*).—We have no faith in any hand work performed for leaf or branch in your case, for we fear the constitution of the soil is bad. Whether too wet, too dry, or too poor, we of course cannot say; but think you will do well to pick off all diseased leaves instantly, and immediately to apply a rich mulching, four inches thick; presuming that the bottom is too poor, and too dry, fitfully. On this mulch we would apply a soaking of guano and soot water, at a temperature of 90°, in order to excite new and clean wood betimes, and pinch the points of all at the end of August. The *Roman Nectarine* is not very tender. If this does not improve its condition, pray dig it up in October, and make a platform as advised in our back numbers.

TO PRESERVE GINGER (*A Constant Reader*).—Put some of the youngest and most tender races of ginger, which should also be free from knots, into a China bowl, cover them with water, and let them soak 12 days, stirring them two or three times a-day during that time, and then boiling them until tender. Let a syrup be made of a pound of sifted loaf-sugar to every pint of water, to which some lemon-peel and cinnamon should be added. Boil this syrup, skim, and when it has boiled half an hour put in the ginger, and boil all together for another half an hour. Pour the ginger and syrup together into a China bowl or vessel, and let it stand closely covered until the next day, when it should be boiled another half hour, and the same be repeated daily until the syrup is clear, and remains attached to the spoon, when it may be put into a jar, and when cold be tied closely down. Some use equal parts of raisin wine and vinegar, instead of water, for soaking and boiling the ginger.

FUSCHIA BUDS DROPPING (*T. P. L.*).—When you shifted them the other day it was probably into cold earth; and the abundant watering you speak of was probably with cold water. Keep the roots warmer; water with tepid water, and shade the tops.

HERACLEUM GIGANTEUM (*H. Winckworth*).—We cannot go to the expense of having this engraved, nor do we see the need for describing it, since you have a flourishing plant from Messrs. Hardy. We shall willingly answer any specific question regarding it.

EGGS DROPT FROM THE PERCH (*E. M. F.*).—Hens will do this occasionally; the best remedy is to have the perches close to the ground, and a thick covering of sand or fine coal ashes beneath.

WARDIAN CASE.—In answer to an inquiry, particulars relative to one on sale may be obtained of Mr. W. Batger, 3 Beauvoir-terrace, Kingsland-road, London.

APPLE BLOSSOM GRUB (*J. C.*).—The grub which destroys the blossoms of your apple trees just before the fruit is set, is probably the larva of the Apple-blossom Weevil (*Anthrenus pomorum*), of which you will find a drawing and description in the *Cottage Gardeners' Dictionary*, p. 53, and in our first volume, p. 145. We know of no cure at this time of the year. Smoking the trees will have no effect. Destroying every infected blossom, and scraping off the bark and destroying the Weevils beneath it at the close of autumn, are the best preventives; especially if you afterwards keep a broad band of moist tar round the stem of each tree until the fruit is well set.

PLANTING OUT POTTED TREES (*J. H.*).—We never received your first communication with the seed vessel. There is no doubt about the benefit of spreading out the roots of potted trees when they are turned out into the border. The hair-like roots of *Cupressus thurifera* we should have set free by washing the earth from them. No stronger case than that could occur, illustrating the importance of spreading out the roots of potted plants.

NARCISSUS BIFLORUS (*Ibid.*).—We think, though we cannot speak with certainty without seeing the specimen, that your wild specimen is *N. biflorus*. It is common for it to have only one flower, and sometimes it has three upon a stalk, or scape. Much less is it a specific distinction having a white margin to the tube of the nectary; this is as often absent as present. We presume you know that its popular names are the *Pale Daffodil*, and *Primrose peerless*. If the flower-bud bent down, or elbowed soon after it came forth from the ground, it is a confirmation of our opinion that your specimen is *N. biflorus*.

WATERING WITH HARD WATER (*R. H. D.*).—It may injure your flowers; and can there be any insurmountable difficulty in exposing the water to the air for a few hours before using it? It is a part of good gardening, as well as good practice in all other transactions, not to run unnecessary risks.

MOTH IN CLOTHES (*G. H.*).—The grub of *Tinea pellionella* is, probably, your enemy. Beat the infected articles frequently, expose to the air, and keep camphor in the drawers, &c., renewed as often as needed, to make them smell strongly for the next six months.

ELEMENTARY CATECHISMS (*G. P.*).—These are published by Messrs. Groombridge, Paternoster-row. Your reproof about the cuttings is not just. If we were to give away these, we should have hundreds of applicants, as we had, to our serious inconvenience, for Himalayah Pumpkin seeds.

ARAUCARIA (*Syonica*).—You do not tell us the species; but as you talk of "an avenue" of it, we presume it is *A. imbricata*. Your light soil ought to suit it, if not overshadowed with trees, for it requires no particular culture. If your plant was raised from a cutting, instead of from seed, it will grow very slow, and remain more dwarf, do what you will.

THINNING POTATO STEMS (*A Constant Reader*).—We quite agree with you in recommending this. Our correspondent says—"We practise it by going along the row before hoeing, and drawing away all the weak lateral shoots, and leaving two, or, perhaps, three to a root of the strongest shoots. We served them all the same way last year, and had a splendid crop of potatoes, there were scarcely any small ones." We cannot tell what plant you refer to in your question. Give us the name and refer to the page.

BITTER BUTTER (*D. H.*).—Cows will not eat the buttercup; there-

fore, it cannot arise from its leaves. The bitterness probably arises from some other weed. The wild Chive gives an unpleasant flavour to butter. Try the effect of a little chloride of lime added to the milk. Dissolve half an ounce of the chloride powder in a gallon of water, and put a teaspoonful of the solution to every gallon of milk, as it is brought from the cow.

EARTH GRUB (T. W. B.).—The grub just below the surface of the soil, which eats the stems of your flowers, can only be destroyed by stirring the earth around them, and killing the marauders when found. It is the larva of the Dart Moth (*Agrotis segetum*).

GRASS UPON A CARRIAGE-DRIVE (W. T. P.).—There is no mode of destroying this wholesale except with common salt; and the most efficient mode of applying this is the form of brine, made by dissolving salt in water until an egg will float in it. Apply it two or three times, soaking the ground thoroughly, on as many following evenings.

CONCRETE WALK (Ibid.).—Your rough gravel, broken hard stones, and strong lime, are just the materials required. The following extract from *The Cottage Gardeners' Dictionary* answers all your queries. If you need more information write again. "Mr. Beaton's directions for making the walk is as follows: A layer of stones, brick-bats, shells, or clinkers, six inches deep, to form a dry bottom; a layer of chalk or lime, in the proportion of one to ten of the stones or other foundation, and well-rolled and watered to the thickness of three inches, with a rise of two inches in the centre; over this half an inch of gravel and lime, or fine chalk; water and roll well again; add one-eighth of an inch of the best coloured gravel; and again roll until quite solid. Have the walk two inches wider on each side than you desire, as this checks the turf and weeds from encroaching, and prevents the rain water getting to the foundation of the walk."

COTTAGE GARDENERS' DICTIONARY (R. Rowell).—You will find *Clematis* if you look again. *Bryony* we have not given, because we only endeavour to give those genera and species which are desirable for cultivation. We cannot give definitions of botanical terms; ours is a *Gardeners' Dictionary*; neither can we give answers on its covers. There is no such work as a *Cyclopædia of Rural Economy for Emigrants*.

POTATOES NOT VEGETATING.—G. S. D. says—"About the beginning of March last, I planted some Walnut-leaved Kidney Potatoes, and at least a fourth part of them have not come up. On searching for them I find the sets with a few small potatoes sprouted from them, about the size of marbles. Now, I shall feel obliged by your informing me if the fault arises from the seed potatoes, or from any error of mine in planting them. I have taken shoots from those that came up the strongest, and carefully planted them, to fill up the vacancies caused by those not coming up. Do you think they are likely to produce a few potatoes?" The fault was in the seed potatoes. They had been kept out of the ground too long; were probably soft; and, it is not unlikely, had had the sprouts rubbed off more than once. Your transplanted stems ought to produce serviceable potatoes. You did quite right.

DEVONIENSIS ROSE (E. R.).—Any florist or nurseryman who advertises in our columns will supply you with this. We do not know the Norwich florist whose Hollyhock seeds you require.

VINE SCALE (W. Franks).—You will see a drawing and description of this (*Coccus vitis*) in *The Cottage Gardeners' Dictionary*, page 260. Paint with a hard brush the stems and branches with a creamy mixture of $\frac{1}{2}$ lb. of soft soap, 1 lb. of sulphur flowers, and $\frac{1}{4}$ oz. of powdered black pepper, to 4 gallons of water; boil it for twenty minutes, and add lime and soot sufficient to make it as thick as cream, and not of an offensive colour.

GLAZED WATERPROOF CALICO (Cambridge).—You must make it by applying the mixture, and in the manner described at page 13 of our last volume.

PEARS AND QUINCE STOCKS (An Enquirer).—We, like yourself, have abundance, or rather superabundance, of bloom annually, but very little fruit. The reason appears to be, that they bloom so early as to have their fertile powers destroyed by the spring night-frosts. Perhaps taking up the trees annually, and replanting them in October, might check this early blooming, and if so, it would account for your observation, that those trees which are newly removed from the nursery do bear. Do these bloom later?

NAMES OF PLANTS (H. G. C.).—No. 1 is *Brassia Henchmannii*. No. 2, *Brassia maculata*, and No. 3, *Odontoglossum laeve*. (Elizabeth H—y).—The leaf only enables us to say that it is a *Crassula*, and probably *C. cultrata*. It flowers, but is not worth much. Grow it in a sandy soil, mixed with limy rubbish, and well drained. (Mrs. E. J.).—Your trifling specimen does not enable us to say positively; perhaps it is *Cotoneaster tomentosa*. (J. V.).—Your carelessly sent bundle contained *Genista canariensis*, *Coronilla glauca*, and *Mimulus rivularis*. The *Cinerarias*, *Calceolarias*, and *Heaths*, no one could name from such specimens. (M. C. R.).—Your shrub is the bladder Nut (*Staphylea pinnata*). The seeds have been used as beads, and their kernels, though bitter, eaten. The other plant is *Sherardia arvensis*. We wish all our correspondents packed their plants as nicely as you have done. They are then a pleasure to examine.

CLIMBERS FOR A GREENHOUSE CONSERVATORY (W. Pain).—Your conservatory is 25 feet high, and its heat need not fall below 40° in winter. The following climbers will suit:—*Bignonia grandiflora*, *Hardenbergia monophylla*, *H. ovata*, *Jasminum odoratissimum*, *J. grandiflorum*, *Mandevilla suaveolens*, *Passiflora racemosa*, *P. cærulea racemosa*, *Tropæolum speciosum* (dies down in winter), *Tecoma jasminioides nana*, *Zychia paniculata*, *Z. inophylla florabunda*.

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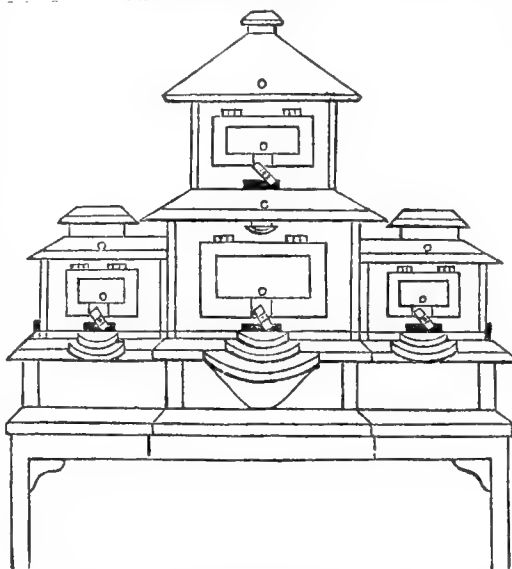
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HUMANITY, ECONOMY, and ORNAMENT.

Much Improved Collateral Bee-Hive, or Apiary, as shown at the Great Exhibition of 1851, by G. PHILLIPS, of Harrow-on-the-Hill, Middlesex.

No Loss or Destruction of Bees, Pure Honey, and an additional Ornament to Lawn or Pleasure Grounds, and the progress of the work, and the temperature ascertained, without danger.

All communications addressed to the Manufacturer, Harrow-on-the-Hill, will receive immediate attention.

M D	W D	JUNE 12—18, 1851.	WEATHER NEAR LONDON IN 1850.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bef. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in In.						
12	Th	Walnut flowers.	29.933 — 29.923	57—40	N.W.	—	45 a. 3	14 a. 8	3 a 10	13	0 37	163
13	F	Yellow Pimpernel flowers.	30.118 — 29.927	67—34	N.E.	0.01	45	15	rises.	☺	0 25	164
14	S	Large Skipper Butterfly seen.	30.175 — 30.116	73—40	N.E.	—	44	15	8 a 58	15	0 13	165
15	SUN	TRINITY SUNDAY.	29.899 — 29.791	70—48	E.	—	44	16	9 50	16	0 0	166
16	M	Cuckoo-spit Insect seen.	29.776 — 29.750	68—46	N.	—	44	16	10 31	17	0 b 12	167
17	Tu	Dog-Rose flowers.	29.975 — 29.924	72—40	N.W.	—	44	17	11 6	18	0 25	168
18	W	Mullein flowers.	30.066 — 30.038	75—41	W.	—	44	17	11 35	19	0 38	169

ADRIAN HARDY HAWORTH says, in one of his letters—"I was a gardener, practically, at seven years old;" and we have three similarly-tasted urchins under our own roof-tree; for a love of flowers, and their culture, is one of the blessed mental inclinations birth-imprinted in us, by our all-kind Creator, as a sweetener of the toil imposed when the ground was ordained to bring forth weeds to encumber the work of the husbandman. A love of gardening—a love of nature generally—is in every child's heart, and though we do our best to choke that affection for the fair things of the soil, by cramming them with book lore, and tutoring them with accomplishments which enables them to "play fantastic tricks before high Heaven," yet, happily, the love of nature will prevail, and we are grateful whenever we hear "My Garden" talked of more, and cherished more, than "My Cæsar," "My Euclid," or even than "My Piano." Yes—yes. We would have every child of our clan love knowledge in all forms—Greek, Latin, and Music among the rest; but though we would have him, or her, love those well, yet we would have each and all love Chemistry, and Botany, and Gardening better. These sciences have more to do with the things of life, they give us another sense, for they let us know the why and the wherefore of all that is going on around us—and the child who can explain why sugar dissolves in his tea, has a scrap of knowledge more useful than he who can tell why Achilles joined in the Trojan war. Thanks to the limited span allotted to man, our old master cannot read or hear of our heresy, in declaring that we think there is more sense, more suggestive matter, in this one verse of Campbell's, than in all the Iliad—

The very Law that moulds a tear, and bids it trickle from its source,
That Law preserves the earth a sphere, and guides the planets in their course.

Now, taking that verse for a text, we would preach for "a full hour by Shrewsbury clock," on the wonders of chemical and physical attraction, which would detain us, even more unjustifiably than we have been already, from the hero of our theme,

Well, then, Mr. Haworth, loved to grub about plants even in his childhood, and this fondness for natural things, strengthened with his strength; but his father was a matter-of-fact personage, a wealthy merchant, who, perhaps, traded with China, who certainly preferred its Tea to its Chrysanthemums, and who would have his son give up Lepidoptera for Law, and Succulents for Conveyancing. He was articled to an attorney, and had to engross through even those bright sunny days, when it is martyrdom not to be hunting for plants and butterflies. But no sooner was our young naturalist released from the trammels of the law, than he at once renounced it for ever, and all its splendid chances of success, and retired to Cottingham, where he resided a few years, and then married. At this village, in the neighbourhood of his native town (Hull), he commenced his arduous career, at once embracing the sciences of entomology, ornithology, and botany.—Shortly after this, he changed his residence to Little Chelsea, near London, where he wrote the *Lepidoptera Britannica*, and successfully cultivated all the succulent plants at that time known in the kingdom, gratuitously and freely obtaining them both from the Royal Gardens at Kew, and from the most celebrated nurserymen.

About the year 1812, he resolved to return to his favourite town and garden at Cottingham, and thither he repaired with the greater part of his extensive collection of natural history. During his short stay at that place (for he only resided there about five years) he was principally in-

strumental in forming, and arranging systematically, the Botanical Garden at Hull. The neighbourhood of London was, however, evidently the field most adapted to a mind so ardently endued with the love of scientific pursuits; accordingly he soon again bid adieu to his native county, and resided till the melancholy day of his death at Queen's Elm, Chelsea. That day was the 24th of August, 1833, when he was in the 66th year of his age. He was enjoying his usual health, and watering his favourite plants the evening previously, was seized by malignant cholera, and in about twenty hours death had closed his eyes.

Mr. Haworth's fame as an Entomologist is scarcely less exalted than as a Botanist; but doubtless his great worth, and which will live to the remotest posterity, is the *Lepidoptera Britannica*, already several times reprinted on the continent, and the same remark will apply to his principal botanical work, *Synopsis Plantarum Succulentarum*, which is in fact the *vade mecum* to all cultivators of this interesting tribe of plants, the one being as useful and essential to the Botanist as the other unquestionably is to the British Entomologist.

Of the private life of this distinguished Naturalist, for such he may be truly designated, having successfully studied all branches of Natural History, we know but little except his having constantly resided in the bosom of his family, and though frequently pressed by the earnest solicitations of foreign friends and correspondents, he could never be induced to visit the continent, or in fact to travel farther from his usual residence than occasionally into Yorkshire, his native county.

Many short extracts from some of his letters were published in *The Gardeners Magazine*, and one of those extracts is too highly characteristic not to be quoted. It is as follows:—"As an old botanist, I love most dearly my first sight of a plant that is new to me. And as your object is to send chiefly things that quite puzzle you, a few must appear riddles to me, and I shall have, or have had, all the pleasure of solving them. Besides, every packet is a sort of lottery, in which any new plant is a prize! Hence you will see my zeal is at last equal to your own. I once was near joining with a public botanic garden here (Chelsea), and I much regret it fell to nothing. Alas! we have now not one public botanic garden left near the metropolis of this rich kingdom; and yet I think such a thing would pay well. About some of your specimens I will decide in November or December next; when I propose incorporating all my more newly acquired specimens with the glued ones; and when many of your well-grown examples will be added, to amend or extend the collection; in which every specimen is acknowledged from whom, or what garden, it came; and when, as far as possible. I have been about 40 years amassing them. A few odd ones were even gathered still earlier, when I was a boy. I was a gardener, practically, at seven years old."

Mr. Haworth was a good gardener, as well as a botanist and entomologist, and for evidence, the reader may refer to his excellent paper on the propagation and arrangement of *Double-flowered Chrysanthemums*, in the 9th volume of *The Gardeners' Magazine*, and to his essay *On the species of the Crocus, and their cultivation*, in the Horticultural Society's Transactions for 1809.

METEOROLOGY OF THE WEEK.—At Chiswick, from observations made during the last twenty-four years, the average highest and lowest temperatures are 73.7°, and 50.4°, respectively. The greatest heat, 90°, was on the 12th in 1842, and the lowest cold, 36°, on the 15th, in 1841. During the time 101 days were fine, and on 67 rain fell.

WE have a groupe of volumes before us requiring notice, and first among them is one entitled *Twenty Lessons on British Mosses. Second Series. Illustrated with twenty-five specimens. By William Gardiner, A.L.S., &c.* It is published by Messrs. Longman, in London, therefore, accessible to every reader who can afford to spend three and sixpence upon a very gratifying little volume. The species are very nicely mounted, and the information relative to them useful and amusing. As a specimen, we will extract what the author says relative to *Aicantagium ciliatum* (Hoary-branched Beardless-moss).

This plant grows upon stones, rocks, and walls, in broad flakes or patches, and is conspicuous from its hoary appearance, arising from its diaphanous-pointed leaves. These are concave, ovate, and acuminate into a slender colourless point, and those of the *perichætium*, or sheath around the base of the seta, lacinated, or jagged at the extremity. The capsule is almost sessile among the perichætial leaves, pear-

shaped, with a wide naked mouth,—a plane lid having a small raised point in the centre, and a mitriform veil.

Many of the large stones or boulders we so often meet with in hilly places, are quite incased in this and similar spreading mosses; and the same verdant drapery is employed by Nature to adorn the rugged cliffs and the dilapidated wall,—thus rendering them more seemly and agreeable to the eye.

Rockwork in gardens might derive much advantage in their embellishment from an admixture of mosses with the Alpine plants there usually cultivated; and, indeed, a moss-garden, as well as a Fernery, would add greatly to the interest of every flower-garden, and amply repay all the care bestowed upon them. The plants could thus be more easily watched throughout the whole progress of their development, and a fuller acquaintance be gained of their structure and history. A small bit of woodland, with a patch of moorland or heath, bordered by an old wall, having a rugged bank on the one side, and a stream on the other, would suffice for this purpose; or, where such a combination could not be commanded, nor even a shady nook or piece of rockwork, many of the species may be successfully cultivated in pots,

or in a Wardian case,—the degree of moisture and shade being regulated by what you observe in their natural habitats.

"What forests tall of tiniest moss
Clothe every little stone!
What pigmy oaks their foliage toss
O'er pigmy valleys lone!
With shade o'er shade, from ledge to ledge,
Ambitious of the sky,
They feather o'er the steepest edge
Of mountains mushroom high."

Mr. Gardiner, who we believe to be thoroughly trustworthy, resides at No. 158, *Overgate, Dundee*, and is an excellent and enthusiastic botanist, but, like many other men of science, he cannot afford to risk the loss of his time and money in travelling for the collection of specimens. To avoid such risk, and yet to place his services at the command of any one to whom they may be desirable, he has issued the following prospectus, and we can assure our readers that if we needed such a collection, we should not hesitate to confide our twenty shillings to Mr. Gardiner's keeping, with the full conviction that whilst we served him, we should in return obtain our full money's-worth:—

WILLIAM GARDINER begs to say, that it is his intention to prepare, during the present season, a series of Collections of Botanical Specimens, each to contain 250 select species,—the subscription, £1, to be paid in advance. This unusual condition in W. G.'s practice as a botanical collector, will enable him to make the sets more interesting, as he will thus have the means of visiting more localities, and bringing together the rarities of each. The long experience W. G. has had in preparing botanical specimens, and the many thousands of them in the possession of his numerous subscribers, to any of whom a reference can be given, if required, will be a guarantee for his fitness for the task he undertakes; and he trusts that those honouring him with their patronage, will place confidence in his executing it faithfully. It is also W. G.'s intention to prepare to order volumes of specimens, mounted and named, of the different tribes of British Plants, as Flowers, Ferns, Mosses, Lichens, Seaweeds, &c., from £1 1s. upwards: Also, "Summer and Autumn Leaves;" "Buttercups and Daisies," a new book for the young; and new editions of "Lessons on British Mosses;" and illustrated copies of the "Flora of Forfarshire." Early application solicited.

WE shall be much obliged by any, or by all our correspondents adopting the suggestion of Mr. Errington in our paper to-day, and sending us a report of the prospects of the fruit crop in their neighbourhood. They need only mention the name of the place, whether in a valley or on a hill, and the state of the crop in one word; for example. MALDON (*hill*), *Gooseberries*, good; *Apples*, bad; *Pears*, partial; &c. Of course we shall be glad of any comments, but these are not essential to the utility of such returns.

GARDENING GOSSIP.

THERE are to be three *Flower Shows at Vauxhall Gardens*, the schedules for one of which have been issued. Those who feel a real interest in the shows at the Surrey Gardens, regret this opposition; for, however it may be professed to be otherwise, the effect must be more or less injurious to a series of exhibitions on the same side of the water, in the same months, and supported by the same people. We see in the speculation

a certain loss to the management. It is impossible to be more attractive than the Surrey Gardens, and nobody will pay half-a-crown to see a flower show when they can see the same for a shilling; but it will have the effect of dividing the attention of exhibitors whose cupidity is aroused by the offer of large prizes. It is thought that this Surrey opposition is not unlikely to lead to a break up of the South London Floricultural Society.

Rosherville Gardens, Gravesend, are especially adapted for flower shows; and at one time the managers contemplated getting up two or three exhibitions a season under an experienced manager. This they have declined, but a private individual has hired the grounds upon speculation, and issued a schedule full of monstrous absurdities.

To say nothing of the great defects, a few of the little ones are bad enough. Prizes are offered for *Cinerarias*, *Pinks*, *Hollyhocks*, and some other subjects in July, long after or before any can be fit to exhibit! In fact, the schedule offers one hundred and twenty-four pounds in prizes, half of which cannot be shown for! If this be the result of ignorance, the speculator deserves to lose; if design, it will fail to take in the public. The metropolitan showers treat the thing as a hoax.

The *Great Northern Tulip Show* went off much to the satisfaction of the Great Northern growers, and was especially pleasing to a class of dealers who cannot throw away foul tulips. Having secured three patrons of smudged-bottomed varieties for judges, and Mr. Henry Goldham, from London, as a fourth, to give countenance to their proceedings, they did as they pleased. They would not disqualify foul-bottomed sorts, and the tulips which had prizes were a disgrace to the fancy.

Mr. Henry Goldham could not have carried his point against three lovers of foul flowers, but he could have retired and upheld the dignity and taste of the south, which rejects as unworthy of notice all varieties with dirty bases. He could have said, "Gentlemen,—As I am of no use against three of you, and never will sanction a prize to a foul flower, I beg to retire, and leave you to the indulgence of a taste which I hope will always be confined to the north." Mr. Turner, of Slough, the best professional, and Mr. Edwards, of Holloway, a spirited amateur, had to sit down quietly under the disgrace of being beaten with tulips that the poorest grower in the metropolis would not disgrace his stand with.

It has been suggested that as the trade has been liberal in subscribing funds from which to give prizes for *New Dahlias*, the managers of societies ought to let everybody show without entrance fees.

The trade cannot anticipate in their gifts the idea of excluding anybody who can buy new flowers; but if the entrance be more than nominal, say a shilling, a great number will be debarred from showing after they have bought new flowers to the extent of their means. We strongly recommend the Shacklewell managers to charge only a shilling entrance for the new class; they had better have twenty at a shilling, than four at a crown, or eight at half-a-crown; it swells the show.

The *Plymouth Royal Botanical and Horticultural Gardens* were opened for the season on the 20th of May, and the attendance was as brilliant as the show of flowers. These gardens, established in those of Mr. Rendle, the enterprising nurseryman and florist, combine the attractions of concerts, promenades, and horticultural displays, and are well worthy of patronage.

As we must confine ourselves to topics of general interest, we will only particularise the following:—At the extremity of the garden, a Chinese pavilion was erected, sufficiently capacious to accommodate several hundred visitors. It was fitted up in perfect keeping with its character. At the extreme end, a well-designed view of the City of Canton was fixed; the river flowing in front, and the mountains in the distance; a fountain playing in the centre, added much to its picturesque appearance. Upwards of eighty Chinese lanterns, *bond fide* manufactured by *Lune Shing*, of Canton (purchased out of bond from the importer by Mr. Rendle), were suspended from the ceiling. On the sides were Chinese paintings, obtained from the same source; and, fully to carry out the design, a very splendid collection of Chinese plants in bloom—*Rhododendrons* and *Azaleas*, interspersed with choice heaths and other beautiful specimens of flowers and plants—were placed in the centre and by the sides of the pavilion; its appearance being truly beautiful, presenting a scene not easily to be forgotten. This was the chief attraction of the day; it was crowded for hours, and all the visitors gave Mr. Rendle much praise for the taste he had displayed, and for the exertions he must have used, in the erection. Amongst the many objects which struck the attention of the visitor in this tent, we must mention the plants intended for her Majesty. These were four handsome specimens of *Rhododendron Catawbiense* in varieties. Mr. Rendle, when exhibiting a collection of his plants in the Crystal Palace, obtained the favour of being allowed to present a group to her Majesty, being the only nurseryman from the county who had the privilege of displaying plants, on the auspicious opening of the Exposition.

The largest sale of first class *Tulips* that has taken place for years—that of Mr. Lawrence's at Hampton—was tolerably good evidence that the fancy is not on the decline.

Pandoras, Strong's King, Glenny's Duke of Northumberland, Brown's Polyphemus, Brown's Ulysses, Salvata Rosa, Musidora, Apelles, Marcellus, Sanders's Vivid, Camoise de Croix, Beterall's Brulente ecclatante, and other choice kinds, created very spirited competition, and many brought prices very nearly approaching the demands made in the catalogues. There was an excellent muster of old growers, and not a few enthusiastic young ones. The flowers were in the finest possible condition.

At the *Oxford Tulip Show*, Mr. Glenny, who was judge, put back every stand that contained a tulip with a stained base, and marked every flower that was faulty, that the growers' attention might be at once directed to the faults which condemned the stand, or that caused it to be placed lower; but it was considered by the growers a valuable practical lesson. In *Pansies* he also lowered all the stands which had the eyes running into the margin, or which had two different shades of yellow in the lower petals, and marked these flowers also. In fact, he carried out to the full the standards laid down in his "Properties of Flowers."

Mr. Goldham, the father of the tulip fancy, has this year again a noble bloom of *Tulips*. His novelties, the result of many years devotion to the raising of seedlings, are beginning to reward him. Many have broken into splendid varieties, perfectly unique, and possessing many of the properties which give value to this splendid tribe of flowers.

The peculiarity of the tulip, which forms a family of itself, is, that when they first bloom from seed, they for the most part come a self colour, except the base, which is white or yellow, and it may be many years before these selfs break into stripes. Mr. Goldham has some of the most promising we ever saw; and many that have broken into the most exquisite varieties, unlike anything we have, and fit to rank with the very best in cultivation.

E. Y.

NEW PLANTS.

THEIR PORTRAITS AND BIOGRAPHIES.



THE ASOCA (*Jonesia Asoca*).—*Paxton's Flower Garden*, ii. 164.—This is a small genus of East Indian trees, or, perhaps, made up of one tree only and one climbing plant besides. It was named by Dr. Roxburgh, in honour of Sir William Jones, the celebrated scholar and man of science. The specific name is that by which it is known among the natives. Burmann, a Dutch botanist, called it *Saraca*, also from its Indian name; and in Rhude's *Hortus Indicus Malabaricus*, a good figure of it is given in the fifth volume. We believe, however, that Mr. Paxton's is the first figure of it which has appeared in any English work. Nevertheless, the plant itself is not a stranger to the British gardener, although it must be either very difficult to grow, or not easily increased, for we see it put down in the priced lists of this season at the very figure which a friend of ours bought it at two-and-twenty years ago, as nearly as our memory serves us. Thus we see that a really good plant, either in the trade or in private cultivation, may, under certain circumstances, keep up its price for twenty years, even in England. Our own experience will not justify us to say pointedly that pieces of the roots, brought over from flowering trees of the *Asoca*, could be relied on to increase the tree that way, and thus to place flowering plants in our possession in two or three years; that, however, need not shake the faith or confidence of those who agree with us about the practicability of transmitting trees from one part of the world to another by means of root cuttings, nor that plants got up from such cuttings would not inherit the flowering stage or property of the tree from which the roots were taken.

Jonesia belongs to a section, or sub-order, of *Leguminous plants* (*Fabaceæ*), founded on the *Dividivi*, or *Cæsalpinea Coriaria*, whose seed-pods, by the way, are among the most astringent of known substances. The flowers of the plants in this division are not "pea flowers," but irregular with spreading petals, as in the *Cassia*, which, without the assistance of the legumes, or seed-pods, might, at first sight, puzzle the young student of the natural system of botany. To such of our gardeners as do not know *Jonesia*, perhaps it will be a sufficient guarantee for its merits, to assert that it is the nearest plant in affinity with the far-famed *Amherstia nobilis*. In India, it forms a low spreading tree, with long

pinnate or leafleted leaves, which, at first, assume a very peculiar aspect at the commencement of the growing season; then, as the young leaves break bud, they hang down almost perpendicularly over each other in long strings; and were it not for the horizontal position of the old leaves, a young gardener might readily mistake this kind of drooping for that commonly induced by deficiency of moisture at the roots in his pot plants. As the leaves gain strength, they gradually assume their leathery texture and horizontal position. The flowers are bright orange, arranged as is shown in our wood-cut, and are fragrant. It belongs to *7-Heptandria 1-Monogynia* of the Linnæan system, though it very frequently has only six stamens. Its name in Bengal, where we have frequently seen it in gardens, is *Usok*. It is a great favourite of the Brahmins, who plant it about the temples of their idol *Siva*.—J. B.

THE FRUIT-GARDEN.

FRUIT SETTING.—As usual, the reports concerning this important matter are of a very varied character. *Peaches* and *nectarines* here (Cheshire) are a thorough crop; *apricots* only partially so. *Plums*, a fair crop apparently; *pears* moderate; *apples*, the greatest promise we ever knew; *rasps*, *strawberries*, *gooseberries*, and *currants*, all heavy crops,—the gooseberries uncommonly laden. It would be rather interesting if reports could be obtained and published from every county in Britain; such horticultural statistics would be of great service, and, subsequently, might be thrown into a tabular form, illustrative of the influences of the varying character of atmospheric moisture, warmth, &c., in their relation to each other. In such reports, the elevation of the district should be stated, and the nearest range of hills, if any, with their bearings. To be useful, they must, of course, be highly condensed; a dozen lines would amply suffice.

We have now to recommend a most careful hand-picking of all choice fruits. People are scarcely aware how much a sure supply in the ensuing winter depends upon assiduity in this respect. It need scarcely be observed, that merely unfolding clustered leaves will not suffice. We have known idle and lounging fellows set to this business, spending hour after hour over the trees, and the latter no better for their labour. The enemy must be sought out and destroyed; for if they (the caterpillars) are simply ejected and thrown on the ground, they will speedily crawl up the trees again. If any *aphides* appear, no quarter must be given; tobacco and soap-suds will be the best remedy. When there is only a shoot point here and there infested, the best way is to dip the points in a bowl, and as this is an economical way of proceeding, a strong solution may be used. Six or eight ounces of strong shag tobacco, added to a gallon of ordinary soap-suds, will thoroughly extirpate them.

CALENDARIAL COMPANION.—We may now enlarge a little on some points in the last calendar—

"Apricots Thin."—These are such trickish things, that unless they are set very thick indeed, it would be premature to remove many until the first swelling is nearly complete. Still, where doubts exist, and where much crowded, they must have assistance. If the trees are healthy, they may, at this period, be thinned to about three inches apart, certainly not thinner for the present.

"Apples Searching, &c."—We do not know how this fruit has set in other parts, but here it is so uncommonly thick, that we intend to give the trees a pruning shortly in the *old wood*, removing whole shoots smothered with fruit, especially in the interior of the trees. We only advise this course where the trees are of some age and full of branches, and as apples need thinning when too profuse, this will prove a great relief to the trees. The

American blight, if it appears, should be instantly attended to; a touch with spirits of turpentine will soon settle them.

"Disbud all Trained Trees, &c."—The great importance of a thorough attention to this has been most frequently pointed out in these pages. We would now submit that too much care cannot be taken over this proceeding; for on its due performance depends, in the main, the setting of the blossom in the succeeding spring. Covering, or non-covering of the blossoms, retarding, &c., all fall into a mere secondary position before the question of maturity in the young wood, practically termed ripening of the wood.

"Mulching."—Now is the time when about three inches in thickness of manurial matters will prove of immense benefit. Wherever a heavy crop of fruit prevails, wherever soils are too light and sandy, or where young or other trees are scant of shoots and freedom of growth, a case for mulching exists. Our practice is to water well immediately the mulch is applied, if the weather is dry.

"Strawberries Water, &c."—Another important affair with respect to the late kinds especially; for the earlier will now be ripening. We know it is scarcely safe to recommend watering during the latter condition; cases, nevertheless, sometimes occur when watering is of great utility, even during the ripening process, especially where the soil is shallow and poor; for it is not altogether unusual to see them "flag" during a period of drought, a condition quite at variance with the production of fine fruit, although it contributes to intensity of flavour. The Alpines especially require liberal watering, or they may become infested with red spider. The runners also should be kept in due subjection.

"Vermin Destroy."—If there be any one period when such advice is of the greatest import, it is the present. It matters not what the kind be—rats, mice, or even the various aphides, red spider, &c., this is the period when their ravages may damage the plans of many months. It is unnecessary here to detail the various plans of extirpating them, such may be found in our back numbers. Assiduity, without procrastination, can alone accomplish such things.

"Wasps Destroy."—We give a penny per head each up to the middle of May, and thence a halfpenny to the second week in June. About this period the young brood, in early situations, will begin to appear, when the destruction of nests should immediately commence. People hunting for them, should look out for the *Vespa Britanica* also, a wasp which builds in bushes, or low trees, generally about a yard from the ground.

"The Stove."—**"Atmospheric Moisture, &c."**—The abundance of ventilation rendered imperative in all houses, where it is essential to use artificial warmth, calls for the application of frequent washings. There is nothing which tends more to the wholesomeness of the atmosphere, than frequent washing down the floors, &c. There is something in this that tends, in a peculiar way, to remove impurities, as well as to soften the atmosphere. To those, therefore, who can spare the labour, we say let your man wash down all floors at eleven o'clock, A.M., and again at four, P.M., using plenty of water.

"Fire-heat dispense with."—It may be fairly presumed that no person would continue to use fire-heat, unless for some specific reason, such as to hasten a crop of any kind to maturity, or to raise a necessary temperature during cold periods, which sometimes occur even in June. To be sure the pinery will require less or more through the season, and the same may be said of the melon house or pit; but as for the ripening of fruits, such as the grape, peach, &c., a much greater degree of perfection will be attained without artificial heat, provided the weather be seasonable.

"*Peaches disbud, &c.*"—Most likely all necessary disbudding will have been carried out long since in-doors. The stopping of gross shoots, however, must be persisted in until the end of their growth; and we deem it good practice to stop a considerable amount of the young shoots, which have attained some length, just about the period when the last swelling begins. It tends to increase the substance of the principal leaves; and on the robust character of these depends, in no small degree, the size and flavour of the fruit. Moreover, it induces a more early ripeness in the wood, and, by consequence, a more decided rest; and, also, throws a little power into the inferior shoots, which should be left growing until the very last, in order to draw sap into them.

"*Strawberries turn out, &c.*"—It is astonishing what very nice crops of strawberries are sometimes produced from plants of the *later* forcings, not but the early ones might answer, but the fact is, few persons can find house or pit room for the plants after the fruit is gathered; and, like pot-bulbs when done blooming, it will not do to throw them aside at random. To do justice to them, they should be preserved in a pit or frame, hardened by degrees, and supplied with liquid manure. The later forced lots, however, will scarcely turn out of their house quarters until May; and then, if they have not been coddled, they will stand in any snug corner, if well supplied with moisture. In a fortnight or three weeks they may be planted out finally, without disturbing their ball; and they should have a rich and fine soil. We are not aware if any other kind will succeed so well as the Keen's seedling; these are notorious for producing fine fruit; at the same time it must be admitted, that since such late strawberries as the Elton have been better understood, there has been less occasion for such a procedure.

"*Ventilate Freely, &c.*"—Above all the evils most to be deprecated as to in-door things, what is termed "burning," is perhaps the worst. Starving, or, in other words, too low a temperature, may be got over; but burning leaves its effects manifest for a very long time, especially with such things as the vine. We have a metallic vinery here, that, do what we will, burns less or more, and has done every year for these twenty years, and certainly not for want of the means of ventilation; for every other back-light slides nearly half-way down, and every front sash opens wide. Now this house has, the whole of this spring, had air given liberally before 6 A.M., and, at nine o'clock, the whole ventilation of which the house is capable is given, with the end door set wide open. Nevertheless, two of the vines in the centre are slightly damaged again, although it was predetermined in the spring to run the utmost risk of starvation, in order to avoid this plague. This evil is, doubtless, in the glass itself, for there is nothing peculiar in the roof (albeit metallic), which is at an angle of 60°. Many a poor wight of a gardener has, doubtless, incurred heavy displeasure, and undergone a great severity of feeling, through a similar case, when entirely beyond his control,—for this world is not particularly careful to place the saddle on the right horse. In such houses, it is, doubtless, a justifiable course to shade even vines, if canvass can be spared; this, however, must only be for three hours on very sunny days, at most, as the shading would soon do serious mischief to a plant so dependent on light as the vine. R. ERRINGTON.

THE FLOWER-GARDEN.

BOTANICAL BORDERS.—A lady has written to us saying, that she "wished very much to have in her garden a hardy plant of every natural order that contains hardy plants;" and adding, "perhaps you would kindly put me in the way to accomplish this plan by giving a list

of those orders of which hardy specimens can be grown as representatives of their class?" Although this is not quite a new idea among amateurs, it is as bold, and, in some sense, as comprehensive as that which ended in the Great Exhibition itself; and if we could enlist "foreign commissioners" to send us over such plants and seeds as we could mention by name, I can see no difficulty in getting up representative collections in the gardens of all those who may be desirous to arrange part of their grounds for that purpose. If I had plenty of money, and a large family to bring up and educate, I certainly would have a border of representative plants for the young ones to learn a general knowledge of plants and botany from, as part of a liberal education. At one end of this border I would have a summer-house, which I would provide with the elementary books on the different departments of natural history; also, as many shells, stuffed birds, and dried insects as would exemplify the best methods of their classification; so that when the boys got out into the world, and travelled—may be in foreign parts, after some honest calling—they could write me home such letters as I should not be ashamed to send to the newspapers or periodicals to amuse or instruct the rising generation, instead of proclaiming themselves *dunces*, as nine-tenths of the authors of "foreign travels" do now-a-days, who cannot describe the difference between a donkey and a March hare, let alone plants. Mixed borders of herbaceous plants, including bulbs, if carefully planted according to some natural arrangement, would have a meaning, and be very useful as domestic schools of botany, as well as interesting scenes at present; for gay they are not, nor can be, according to our notions of gayness in a flower-garden.

One plant from every order containing hardy ones, as suggested by our correspondent, will give us but a very faint idea of a natural arrangement of herbaceous plants. Mr. Loudon once collected an assortment on that plan, which I had examined one day with himself, my kind-hearted friend, and I told him on the spot they were no better than "Love's Labour lost." He had them arranged according to the system of Decandolle, beginning with the *Crowfoots* (Ranunculaceæ), our own field buttercups being the most familiar to us of the whole of them. But neither a buttercup, nor any other plant in the order, is sufficient of *itself* to give a new beginner an insight into the varied forms assumed by the *Crowfoots*, although they do not vary from each other half so much as those of many other orders. To meet this difficulty, and to render the study of plants more easy to the unlearned botanists, we now-a-days divide the great natural orders into small groups, as farmers do their cattle when they send them to the shows to try for prizes. Now, if a man were to send six head of cattle to the "Home park," next July, for competition, all in one lot, and that the first cow was of the Hereford breed—the handsomest breed of any, apart from the Dunrobin black highlanders—the next a sprawling-headed Devonshire, the third an Alderney, the fourth a short-horn, and the fifth and sixth without any horns at all; why! the judges would think the man was beside himself. He ought to put up six of one breed, as the breeders say; but even with a sample of six "breeds," a person coming over to the Exhibition from some unknown part of the world, where cows were never heard of, would have much to learn about our milkers, even after studying the peculiarities of the whole six. But let us suppose that this stranger could only see one cow, and that a Suffolk dun, without horns, he would never make a cowman from all he could learn by this sample; and it is just the same with attempting to learn botany, or the natural arrangement of plants, by single specimens of each order. Large orders, similar to the *Cow order*, are all, like it, divided into breeds, and to have any thing like a good notion of any one order, you ought to have at least one

specimen of each breed in that order. Then, suppose we stick to the Crowfoots, we must, on the very lowest calculation, have fine plants to represent the fine kinds of breeds, or sections, or sub-orders, into which botanists have divided them for our convenience. The *Clematis* is a Crowfoot, and represents the first section of them; the *Anemone*, the second section; *Ranunculus*, the third; *Helebore*, the fourth; and the fifth is represented by *Actæa*, a genus very close to Bugwort (*Cimicifuga*). Therefore, it must be as plain as A B C that an acquaintance with a clematis, or buttercup, or bugwort, or, indeed, any one of the sections, without knowing the rest, that is some plant in each, cannot possibly give one a good idea of the Crowfoots, and yet they are almost as easy to learn as nine-tenths of the natural orders.

On the other hand, suppose I planted a bed in the flower-garden after this fashion, one *Tulip* from Mr. Glenny, one *Hyacinth* from Mr. Fish, a *Welsh onion* and a *Giant asparagus* from Mr. Barnes, one of those beautiful *Squills* which Mr. Weaver told us of the other day, and an *Agapanthus*, or blue African lily, with the finest lily in or out of Japan; what kind of a natural order do you suppose they would all make? or, rather, what an unnatural association I should have in this, and yet I still want half a dozen more strange-looking plants, including the *African aloes* and the *Yucca*, before I could show off the different breeds which compose the beautiful order of *Lilyworts*! A garden onion in full flower would give a stranger a better notion of a tulip than the Welsh leek would give of the great grass trees of New Holland; and who could make out any beauty in the lily from seeing the asparagus in blossom? There must be a screw loose in the art of applying meaning to words, if there is anything like *natural* in this natural order of *Lilyworts*. But the fault is with ourselves; all the systems of arranging plants since the days of Linnæus are just as artificial as the Linnæan system itself, and some of them ten times more so. At any rate, it is as clear as daylight, that very little can be learned by planting or studying only a single individual of each natural or unnatural order. I do not say this, however, with the intention of reprehending the idea which gave rise to this letter,—far from it; but the subject is too extensive for our little work, unless there was a general demand for it among our readers, and if there was, I would eagage to furnish samples, both of herbaceous and woody plants, not only of all the natural orders, but also of the more prominent sections of each order, and all according to the latest and most approved authorities.

TRANSPLANTING EVERGREENS.—My experience in this branch of gardening for the last twelve months has caused me to alter my opinion of the best time in the year for performing the work. Whether I am wrong or not, there can be no harm in telling my tale, in order that gardeners may test the subject, or, at any rate, to open the question once more, and to try experiments on it, and record them. Among reading gardeners, the question about the best time for transplanting *large evergreens* has been settled for some years, August and September being the two best months. Last year, I pushed the whole month of July into the scales, as being quite as good, if not better, than September for this work. Putting off the work to November, as was the fashion not long ago, is certainly not the best way to succeed. The large box bushes I planted last June, under a fierce hot sun and a long drought, have done as well as any one could wish, not a sprig of them has died, and they are now growing as well as can be. In July and August following we removed very few things; but from last September to the end of this last May, we had to move some almost every week, as the alterations going on in the garden suggested; and a "second thought" caused the removal, this spring, of some large

specimens that were only transplanted last autumn, and, as luck would have it, these plants happened to be of different families—there being hardly two of a kind which had to be thus dealt with the second time, and it was from these that I took up my new notion of the best time for transplanting evergreens, and the history of one specimen will show my reason and meaning.

About the end of last October we removed an Italian cypress (*Cypressus sempervirens*). It was a fine plant, above twenty years old, and more than that number of feet in perpendicular height; but having had two leaders near the top, the opportunity was taken advantage of to reduce it to one leader, and the shortest being the best formed one, the longest was cut off, which reduced the height of the plant two or three feet. This cypress, like all the rest of them in the garden, never ceased to grow the whole winter, and no one could see now, from any indication, that it had been removed these ten years; but it was transplanted twice since last autumn, first in October and again in April, and both times with horse power; but all this time it had not formed one single new root, nor made the least effort to heal over the ends of any damaged roots. I confess that, under the circumstances, I could hardly believe all this if I had not seen it,—a fast-growing evergreen removed in the autumn, and kept on growing through the mildest winter any one can remember, and still, up to the very end of April, not having made the least effort to increase or repair its roots. This led me to examine the roots of several kinds of evergreens all over the garden—those that were not transplanted, as well as those that were—and from the whole I have come to this conclusion—that *every month* in the whole year, if the winter is very mild, is the *best month* for *some particular plant* to be removed, and that I, and the whole of us, were quite wrong in supposing the autumn; or any particular time, to be the best time for *all* evergreens to be removed. We might just as well have broached a new doctrine about potting every plant we grow, bulbs, orchids, and all, in one month, as to assert that one particular month in the autumn, or spring, or summer, is the best time for all evergreens to be moved; but let us have more observations than mine recorded on the subject.

D. BEATON.

HOTHOUSE DEPARTMENT.

EXOTIC STOVE PLANTS.

ORCHIDS THAT THRIVE WELL IN POTS—(Continued from page 130).

ONCIDIUM.—This is probably the largest genus of the whole tribe, and the species are generally possessed of great beauty, and lasting a long time in bloom. They mostly are natives of the warmer parts of the western continent, and the West India islands. None, we believe, have yet been discovered in the East. We have already described a considerable number of them at pages 9 and 36 of the fourth volume of THE COTTAGE GARDENER, as thriving best on blocks, and we shall now describe the remainder (at least, such as are worthy of culture) as being best cultivated in pots.

O. ALTISSIMUM (Tallest O.); Panama.—Though this species does not exhibit in its bloom the brightest colours, yet the long flower-stems it produces (often from eight to ten feet long), the numerous branches on each stem, and the innumerable flowers on them, render it a desirable species. Sepals and petals yellow, spotted with brown; the lip is a shade lighter, and the spots upon it are of a brighter hue. Easily grown, and if well rested it flowers freely. 15s.

O. AMPLIATUM (Broad-lipped O.); Guatemala.—Sepals and petals clear bright yellow, thinly spotted with reddish chocolate; the lip is broad and large, and is nearly white, spotted with brown. The pseudo-bulbs of this

species are very large, solid, and heavy. They are very much wrinkled, and might easily be taken, when without leaves, for some swollen reptile. The flower-stems rise from the base of the last formed pseudo-bulbs, and when that is large and healthy, will rise to the height of three feet. They are but sparingly branched, but the flowers, on account of their size and bright colour, are exceedingly attractive. A large flowering plant will cost 42s.

O. BAUERII (M. Bauer's O.); S. America.—In colour, shape, and habit, this approximates very near *O. altissimum*, but when the two are in bloom together, some difference will be perceived. Perhaps the principal difference is in the shorter and more densely-flowered stems. 18s.

O. BICALLOSUM (Two-warted O.); Guatemala.—Sepals and petals have a deep brownish orange ground colour, very rich, and difficult to describe. Upon this ground colour there are some rather large spots of rich brown, and the same colour forms an edging round them; the lip is bluntly broad, and of the same colour. The flower-stems are stout and short, and produce a goodly number of large, handsome flowers. 42s.

O. CANDIDUM (White O.); Guatemala.—Sepals pure white; petals the same colour, with two violet-coloured spots on the base of each; lip, clear bright yellow. A very pretty species, but so scarce, that we cannot put a price upon it.

O. CAVENDISHIANUM (Duke of Devonshire's O.).—The whole flower is yellow, richly spotted with chocolate. The leaves are very thick and large, and of a peculiar light bright green. The plant itself is a handsome object. The stems rise to the height of two feet. A desirable species. Good plants may be obtained for 31s. 6d.

O. DIVARICATUM (Spreading O.); Peru.—The flowers are of such a variety of colours, that it is almost impossible to describe them; the prevailing colours are yellow, orange, and brown. They are produced numerously on stems from four to six feet long, and form, when in bloom, a very beautiful object. It is a good plan, in order to show off the blossoms to the greatest advantage, to train the long flexible flower-stems round a shield-like, or even globular, trellis. This ought to be done before the blooms expand, and then each bloom will adjust itself to be seen in its natural position. If trained after they are expanded, some of the blooms will be seen with the under side outwards, which will considerably injure the general effect. This is a pretty species, with handsome foliage. 31s. 6d.

O. FLEXUOSUM (Bending O.); Brazil.—Sepals and petals bright yellow, with rich chocolate-coloured spots; the lip has the same colours, with more numerous and brighter spots, especially towards the base. The pseudo-bulbs stand on a long rhizoma, and each newly-formed one rises above the rest, so that it is necessary, in order to form a good bushy plant, to divide them into lengths of three or four pseudo-bulbs to each division, and as they are rather weighty, a strong branch should be fixed in the middle of the pot, two or three feet long. Tie each length in an upright position, at equal distances, round the stump. The flexible flower-stems will then, when in flower, gracefully curve downward, and form a kind of umbrella-head of bloom. This is an old species, easy to grow, and should, therefore, be in every collection. 10s. 6d.

O. FORKELLII (Mr. Forkell's O.); Mexico. This is a fine species, but nearly extinct in cultivation. A fresh importation of it would be very acceptable. The sepals and the lip are greenish yellow, blotched with crimson; whilst the petals are of a pleasing violet colour. The flowers are above the medium size. This, with the beautiful combination of colour, renders this species a very handsome and desirable one.

O. HASTATUM (Spear-like O.); Brazil.—Sepals and

petals with a ground colour of clear yellow, prettily barred with brown; lip brownish purple, and halbert shaped; hence its name. The flowers are long and branched. A pretty species, lasting a long time in bloom. 21s.

O. INCURVUM (Bent O.); S. America.—This is an elegant species when in bloom; the flowers are of a beautiful bluish white colour. The sepals, petals, and lip, are all bent backwards; hence its specific name. Very desirable. 21s.

O. INSLEAYANUM (Mr. Insleay's O.); Oaxaca.—Sepals and petals pale yellow, blotched and spotted with shining brown, which does not, however, quite extend to the end of each petal; the lip is large, nearly round, narrowing at the base; colour clear yellow, with bars of rich reddish brown on the outside. This is a lovely species. The flower-stems are short, and produce five or six of these beautiful flowers. This is one of the best of the genus, and commemorates a very worthy man, who was gardener to that zealous cultivator of orchids, the late Mr. Barker, of Birmingham. Price 31s. 6d.

O. LANCEANUM (Mr. Lance's O.); Surinam.—The flowers of this fine species are exceedingly handsome. They are very large, nearly the largest of the whole genus, and of the most pleasing colours. Sepals and petals pale yellow ground, covered with streaks of purplish crimson. The lip varies in colour, being nearly white in some, and in others of a bluish cast. The leaves are large and beautifully spotted. Every collector, however small, ought to have this fine species. A large plant, such as we see sometimes at the metropolitan exhibitions, with seven or eight flower-stems from a foot to a foot and a half high, is one of the finest objects even in this fine tribe of plants. Flowering plants may be had for 42s.

O. LEUCOCHYLUM (White-lipped O.); Guatemala.—Sepals and petals yellowish green, barred and spotted with brown; lip large, of a dazzling white, and of a triangular form. The flowers are borne on long branched stems, often eight or nine feet long. This is another beautiful and interesting species, and will grow in a low temperature. Mr. Skinner, who resided for several years in the province of Guatemala, remarks, respecting the climate, "The seasons here happen at the same period of the year as in England, the coldest weather being in December, January, and February, and the warmest in the same months as in Europe;" therefore, this plant may be grown in our common stove with the greatest success, provided a moist atmosphere is kept up whilst the plant is forming its new growth. This renders this species a desirable one for the new beginner.

T. APPLEBY.

FLORISTS' FLOWERS.

MR. GLENNY ON FLORISTS' FLOWERS.

THE *South London Horticultural Show*, on the 28th of May, was well supported. Five tents of productions highly creditable to the growers divided the attention of the company. In the seedling tent there were several *new Tulips*, two of which received certificates, one a byblomen, called *Mr. Smith*, and a Rose, called *Princess Helena*. The former, a small well-formed variety of some promise, having substance, and a tolerably smooth edge; although the marking was not very fine, it was pure at the base, and may be a useful show flower in better condition. The latter was the largest Rose in cultivation, and free from those faults which are prevalent in our large flowers. It is pure, of good average form, tolerably compact, inclined to pretty marking, very pale, but a noble flower, and not in the style of anything we have. It would stand no chance in a competition with our finest Roses of moderate size, but is a great acquisition to a bed. *Pandora* Pansey was exhibited again by Mr. Hunt, and obtained a certificate. *Emperor* was

shown and did not. *Lockner's Surprise* Cineraria again obtained a certificate. It is the cupping of this flower that wins favour, the edge is too deeply scalloped for us, and, moreover, it is a self, which cannot bear a price, because of the great number we have. A new *Verbena* appeared in Mr. Smith's stand, called *Rival Purple*, singular and striking in colour, which is quite new, it forms a bold truss. It is not a first-rate form, but does not discredit a stand on which variety is an object. It was not shown as a seedling, but as one in twelve varieties. A number of *Calceolarias* were shown by Mr. Gaines, none of which had certificates. There was one, however, which was an advance, and which he may let out without discredit, *Miss Charteris*; a rich cream colour, with a crimson blotch, and more than usually inflated—that is to say, a better approach to a round.

As to the general show, it was rich in plants. Tulips were shown in great numbers. *Pansies* abounded, and, perhaps, considering there were so many, a list of the best that we could pick out from all the stands may be useful to beginners. Addison, Hooper's Wonderful, Duchess of Rutland, Lord Walsingham, Almanzor, Example, Mrs. Beck, Caroline, Aurora, Caesar, Duke of Perth, Bertha, Thisbe, Ophir, Sir J. Franklin, Viceroy, Sir R. Peel, Sylvia, Moor of Venice, Duke of Norfolk, Miss Hamilton, Bellona, Androcles, Constellation, Master Lacon, Masterpiece. Many others that we know to be occasionally good were shown, but, in *Supreme*, for instance, Mr. Beck, and some others, the eye broke through to the border. Those we have named were shown in an unexceptionable state.

Many packets of flowers have come to hand, and, strange as it may appear, a vast majority beneath notice. Were it not for the expense, I should almost fancy people wished to hoax me; and it may be at once concluded, that if I omit to notice any thing it is because there is nothing to say in its favour. If I might give a little advice to florists, for the purpose of saving them trouble, I should recommend them to bear in mind that unless a *Ranunculus*, an *Anemone*, a *Tulip*, *Pansey*, *Dahlia*, *Cineraria*, *Calceolaria*, or, indeed, anything else, be better than those we already possess, or is new in colour, it is a waste of money to send it,—not that I care about the trouble, but that there must be a degree of disappointment to the parties. Of *Cinerarias*, *Calceolarias*, and *Pansies* I have in three or four days received hundreds. The general fault in *Cinerarias* has been the edge too much scalloped, the petals individually full of ribs, and notched at the ends, besides which, the vast majority have been selfs, or shaded selfs, presenting no novelty in colour. The most prevailing faults in the *Calceolaria* have been flatness on the surface, or those melon-like indentures, otherwise there has been great variety of colour; and where colour alone is the recommendation, I would recommend the grower to select a few of the most striking, to grow until they can get into a better character for form. A *Calceolaria* should be as round as a cherry; of course, then, the more nearly they approach, by inflation, a hollow ball, the better. The most common faults in the *Pansies* have been the smallness of the white or yellow field, and the eye breaking into the border, thinness of the petal, crumple form, and roughness of the edges; and where any of these faults are conspicuous, they hardly need be sent for a second opinion. I have noticed a few things, with their qualities; but were I to notice all, it would occupy space without interesting anybody.

We have received a box of *CALCEOLARIA* blooms of every conceivable variety of colour, many very striking and beautiful, from "An Amateur." We object to give opinions upon things sent anonymously, but when they have recovered, we will select a dozen of the best. With all their beauty, however, there is that flatness of face, and melon-like indentation, which renders them value-

less, with the exception of two or three; and so it always seems to happen, the best forms have the worst colour.

THREE PANSIES.—Something has completely baffled our judgment on two of the three flowers, enclosed in a round tin box. One exhibits the most extraordinary shades of bright green in the field that we ever witnessed, so much so, that we have been obliged to conclude that the moss has stained it; a second, though nearly a self, has a tinge of the same colour. Let us know whether this green is natural to the flower, or has been acquired from the moss.

PANSIES (J. G. B.).—No. 4 is the only one worth trying; if the field enlarges or the eye recedes, so as not to break into the margin, it may prove an acquisition. (*W. T., Morpeth*).—*King of the Whites* has form and distinctness of character, and many worse are shown; but it is thin, and transparent, which tell against it as a first-class flower. (*I. B. Stroud*).—*Ion*, too much like *Old Eclipse* to be of any use. The small yellow one should be well grown; it has colour, form, and texture, and may attain size. (*T. J.*).—Only one of the eleven likely to be useful; I think it has not bloomed to character. The first bloom cannot be depended on, and many have only a short season of true flowering.

CALCEOLARIAS (Mrs. M.).—None are good enough to rank among first-class flowers. The best are Nos. 4, 1, and 32; they are more round than the rest—that is to say, more inflated; but they are far behind some we already possess.

VERBENAS ("James," Bedford).—No. 2 not half so good as *Esquisite*, and No. 5 very inferior to *Shylock*. (*N. N.*).—The petals all too narrow; the slate-coloured variety has too small a truss, but if it improve in that respect the colour is new.

CINERARIAS (W.).—*Little Wonder* is pretty, but very small; it is of a good habit too. It may be a favourite if shown well, but it is evidently badly grown. (*W. W.*).—We have better whites already. The tipped one is so like *Lady Hume Campbell* that they could not be shown together.

PELARGONIUMS (Thomas —, Wallsall).—It is impossible to give a positive decision without seeing the plant. There have been five blooms on the truss, but were they all in flower at once? Many bloom not more than one or two flowers at a time, and before the last one of the truss is open the first has dropped. The flowers are above average, but not new. (*O. B., Essex*).—None really good. B 4 is the best, but only three pips to the truss: there should not be less than five.

RANUNCULUSES (T. R., Maidstone).—The only promising variety is A 7, and that is anything but A 1. It is a bad *Admiral Napier*. G. G.

FLORISTS' FLOWERS CULTURE.

THE PINK is now fast approaching to the blooming state. To bring it to the highest perfection several manipulations are now necessary. The first is a mulching of short, well-decomposed, hotbed manure spread thinly all over the bed. The advantages of this application are—a protection to the roots from drought, and whenever water is applied, either from the watering-pot or from the clouds, the stimulating and enriching powers of the manure are carried down to the roots, enabling the plants to produce finer flowers and healthy shoots, from which the pipings are to be taken. By thus promoting a high state of vigour, the plants are not so subject to the attacks of insects, it being well known that if a plant is in bad health, insects are sure to appear more numerous, and cause a still more weak state. The next point to attend to at this season, is to secure the flower-stems from being broken, and to preserve the flowers from being dashed with earth or mud. The means to be used are sticks just strong enough to support the stems in an upright position, and preserve the flowers from being spoiled. The best sticks are made of split deal laths, and if they have a coat of lead-coloured paint.

and another of light green, they will be neater, and more like the natural stem of the flowers, and, besides, will last much longer. They should be thrust into the ground firmly, and stand no higher than the flower-stem is likely to grow. Use no more than one or two, at the utmost, to each plant. It is not prudent to allow more flower-stems to each plant, unless it is very strong, for it is not the multiplying of the number of flowers that increases the chances of securing a greater number fit for the exhibition table, but, by reducing the number of flower-stems, the whole strength of the plant is accumulated to produce finer flowers on those that are left. Generally speaking, however, each plant will produce only one stem, and this may have on it several blooms. Here is a case, again, that requires discrimination. If the buds exceed the number of three, it is advisable to reduce them to that standard, by carefully rubbing them off without injuring the stem. In weak subjects, it may be advisable even to reduce them to the uppermost one, leaving that only to bloom. Now as to whether it is desirable to leave one or more stems, or one or more buds to bloom on each stem, depends upon the strength of the plant—the judgment of the cultivator, exercised upon the state of his plants, must be the guide.

The next point to be considered, is the tying the stems to the sticks. Simple as this operation may appear, it must not be done without thought. If they are tied tight to the sticks, the lengthening of the joints will cause them to form bends of a knee-like shape, which, if left for any time, will suddenly snap off at a joint above or below the tie, and the bloom, consequently, will be destroyed. To prevent this mishap, tie the mat, or other material used, first round the stick as hard as you please, then bring the flower-stem within the two ends of the string, and tie a knot, so as to leave a small space for the stem to grow upwards and outwards. The stem then will hang loosely, and all danger of breakage will be avoided. When the flower-stems have attained their full height and thickness, and the flowers begin to open, it may be desirable, to protect them from heavy winds, to tie them in pretty tight, there will then be no danger of the stems breaking. As the buds advance towards opening, to prevent them bursting the calyx or green flower-cup on one side, it is absolutely necessary to place round each a ring of some kind to keep them whole. Rings of India-rubber, of the right diameter, are the best, because, as the buds expand, the ring expands also. They should be placed as near as possible to the centre of the bud, and if it shows any tendency to burst on one side, in spite of the rings, slit the other divisions of the green flower-cup with a pair of sharp-pointed scissors down to the protecting ring; this will cause the petals, or flower-leaves, to expand equally on every side, and thus cause a good-shaped flower. Where great perfection is desired, it will be advisable to place under each flower a card, with a hole stamped in the centre. This will keep the guard leaves, or lower petals, from falling too much backwards, and will keep them in a flat, even form when the flower is fully expanded. All badly-shaped, or not properly-coloured petals, should be drawn out early with a pair of tweezers, great care being used not to injure or displace the perfectly formed ones. The flowers should now be in the greatest perfection, and will require, to prolong their beauty, a shelter from wind, rain, and sunshine. Hoops bent over the bed with three or, which is better, five longitudinal rods tied firmly to each hoop, form the rafters, as it were, for a roof of either mats, canvass, or glazed calico, the last being the most effectual.

CARNATIONS AND PICOTEEs require much the same treatment now as described above for pinks. Next week we shall enter more fully into the particular points of culture they require.

RANUNCULUSES must now be well supplied with water, or the blooms will fail.

TULIPS going out of bloom should have the shades removed, and all seed vessels cut off, to induce the bulbs to go to rest.

T. APPLEBY.

THE KITCHEN-GARDEN.

WHERE the soil has been well managed, and the seed committed carefully to the earth in due season, many of the crops will be by this time in a healthy and luxuriant state, and, in some cases, already yielding a bountiful return for the use of man. How beautiful and interesting a matter it is to those who are in the habit of watching and assisting Nature's wonderful works. If the weather continues hot and dry, considerable assistance may, no doubt, be given to some kinds of crops by the application of water; but to apply water by dribbles, or in small quantities, or over the foliage of plants in clear, fervid weather, will injure, rather than assist, the progress of vegetation. Our system in applying water to crops is first to mulch the surface, which has, of course, throughout the season, been well kept open by constant stirrings, and then to apply one regularly good soaking; but we never apply the water over the foliage of the plants or crop, but only to the surface of the soil, from the spouts of the waterpots, one in each hand, with a branch of brushwood thrust into the spouts or noses of them, so as to lead out the water quickly and softly to the place desired. The water may thus be applied with beneficial effect on the shady side of late *Peas*, *Cauliflowers*, *Scarlet Runners*, or any other growing crop, at any time during the day, though we prefer applying it late at night, or in cloudy weather, if it can be so ordered. Irrigation at night, where it can be commanded in the heat of summer, is to a vegetable garden truly valuable.

Plant out, if not already done, *Capsicums* and *Chillies* close under walls or fences, on which they may be nailed or tacked close, or on a warm border. *Cardoons* should be thinned, and kept encouraged by constant surface-stirring, and the last sowing made for this season. A small sowing of *Curled Endive* may be made; and also a planting of *Leeks*, *Onions*, *Carrots*, *Parsnips*, *Red* and *White Beet*, *Salsafy*, *Scorzonera*, *Parsley*, and all kinds of summer crops should have their final thinning; but constantly encourage a healthy, luxuriant growth, by frequent surface-stirrings; indeed, it cannot be too often performed while the hoe or scarifier can be at all got amongst them. Do not neglect at this season full sowings of *Coleworts*, and the getting out, at all convenient opportunities, plenty of *Savoy*s, the various *Kales*, *Brussels sprouts*, *Kohl-rabi*, and other winter stuff. We plant a good deal of for winter cattle feeding. The whole of the potato ground is thus planted, and produces a heavy crop.

POTATOES.—With regard to the prospect of a Potato crop no one can foresee, to any certainty, what the produce may be. They are at this time, it is very true, to all outward appearance, looking remarkably strong and healthy; but they will not bear a close examination. This our experience has taught us; and although all our early crops have been very good, with scarcely the least indication of the old disease to be seen, we are sorry to observe that amongst all the out-of-doors crops that we have examined, the old enemy is still distinguishable, although in a much slighter degree than we have observed it for many previous years. Up to the present time we have seen no indication on the foliage nor up the stalks higher than two inches from the base or old plant, and not in any case in that virulent manner that we have on former occasions observed. All that at present is to be found consists of small specks, some advanced into blotches; but as scarcely any stalks are

to be yet observed affected with bulgings, gangrene, or decomposition, there seems a better prospect at this moment of a bountiful crop than there has been for the last seven years. Thunder-storms or frosty mornings, which have sometimes followed June storms in former years, fogs, and close, dark days, may have a very unfavourable effect, and yet blight our best hopes, for atmospheric influence has a wonderful and sudden effect with regard to this disease.

RIDGE CUCUMBERS, VEGETABLE MARROW, &c.—The soil about these should be well surface-stirred and mulched; the hand-glasses, when full of bine, and after having been lifted up by raising the corners, and filling up with earth between to prevent draughts, should have at first the south side raised to let out the bine, and, after remaining thus a few days, the glasses should

be lifted on to three or four brickbats, and the bine be trained out regularly all round, pegged and stopped. *Ridge Cucumbers* should not at first be too suddenly exposed to the open atmosphere and draughts, but gradually, by first increasing the air, and then mulching them. When first let out they will escape sudden checks, the effects of which very often produce canker, rust, mildew, &c., &c. *Melons* may still be ridged out; also, *Frame Cucumbers*, and another sowing made. Both *Cucumbers* and *Melons*, in full fruit-bearing, should have occasional assistance with liquid manure. Give air at all times previously to the sun's shining on the structure. Apply a sufficiency of good tepid water at shutting-up time, which should be early. Never apply it over the foliage or fruit, and neither canker, mildew, and red spider will be seen.

JAMES BARNES.

MISCELLANEOUS INFORMATION.

OUR VILLAGERS.

By the Authoress of "My Flowers," &c.

WE are sometimes permitted to see scriptural illustrations in the lives and experiences of those around us, as well as in our own. We sometimes see very remarkable proofs that the human nature is unchanged, that the ways of men are the same now that they were in the days when He, who alone was "without sin," "taught in our streets," and that the Word and judgments of God are as plainly and powerfully displayed in the rural, secluded, parishes and villages of England, as they were in the splendid city of Jerusalem, and on the rich plains of the Holy Land.

Joseph R—— had been all his life a farmer, and a prosperous one. He never married, but his sister lived with him and kept his house, and they grew old quietly together. When I first remember him, a great many years ago, he was an athletic, hale, middle-aged man, with an attempt at half-gentleman-ism about him, which is never pre-possessing, and frequently arises from a mind lower in its feelings than the station in which it has been placed. He used to wear a sort of green sporting coat, with what were formerly called *top-boots*, and a hat set knowingly on one side, a dress altogether unseemly for a sensible, steady man, as all British farmers *ought* to be. Occasionally he came to church, but so rarely, that we used to remark the occurrence when it happened; and his look when there was vacant and unconcerned. After a few years even this attendance was given up, and as his farm lay quite on the other side of the extensive parish, some years elapsed before I saw him again.

He was a man notorious for hoarding his grain; stacks after stacks were made, and allowed to stand in his rick-yards and fields. He could not bear to thrash them out, prices were never high enough for him, he would wait and see what another year would produce, and even in times when wheat was so high that every one brought their stores to market, and the poor were literally wanting bread, Joseph R—— went about with his hat on one side, unmoved, and immovable. It cannot literally be said that he pulled down his barns to build greater, but his stacks were obliged to be put in the fields because there was no room for them at the farm.

In the course of time rats became so numerous, and there appeared so much damage done to the corn, that the farmer was obliged to look into the matter, and throw open some of the stacks to see what was going on; and as a labourer expressed it, whose way to work lay by the farm, "the noise of the rats and mice among the stacks was like hounds in full cry." When the stacks were examined, a very great number of them were nothing more than so many hollow shells,—the entire centre of each was crumbling dust; and the refuse straw was thrown into the farm-yard to form manure. A large barn full of thrashed wheat which had been suffered to remain there for years, was "minted," as the country people said, and was nothing but chaff, so that the

"moth and rust" had indeed destroyed the treasure which poor Joe R—— had been laying up for himself on earth. Still his love of hoarding, and hope of gain did not forsake him, he followed the same course, forgetting that his soul might be required of him before the day of prosperity came.

When I next saw him I scarcely knew him, he was grown so old, and dirty and grey. His hat no longer sat smartly on his head, but was pulled over his eyes, his sporting coat was exchanged for an old brown one, and his boots, which he still wore, looked as if they had never been cleaned or mended since the days of his youth and pride. In fact death had placed his seal upon him, although, perhaps, he did not know it, for the first approaches of the sure, but stealthy foe, were silent and soft. He was at this very time negotiating a matrimonial treaty with the widow of a baker, who was left with houses and land, which poor Joe probably thought would add to the gains he was heaping up, not knowing who should "gather them;" but the widow was cautious and wary, and so much time passed in preliminaries, that all hope of worldly happiness faded and died. An icy hand lay heavily upon him, and he at last took to his bed to rise from it no more.

The closing scene, alas! was such as might be expected. Joseph R—— had sown to the world and to the flesh, and we are told by lips "that spake as never man spake," that he that "soweth to the flesh, shall of the flesh reap corruption." His bodily anguish was severe—excruciating; but the torment within must have been yet more terrible, for he would not let his sister move out of his sight, nor would he suffer any one but his medical attendant to go near him; no one was permitted to enter the room, not even the servant, and he resolutely refused to see his clergyman. In this state of agony and desolation he lingered for some time, and it was only one day before his death, when his weakness of body and mind had reached its lowest point, that he consented to the clergyman's visit being paid. The interview was, of course, short and unsatisfactory, and in the course of a very few hours from its occurrence he breathed his last.

The poor of the neighbourhood were much struck at the circumstances attending the death of Joseph R——. They knew well all that he had done, and all that he had not done, and their plain and simple acquaintance with the Word of God, untortured and untwisted by the subtleties of human wisdom, enabled them to see at once the affecting parable performed before their eyes:—Oh, that we would all lay to our hearts such solemn scenes as these, and draw from them the instruction and reproof they so abundantly convey! It is not among our more lowly brethren only that we find these passions at work; the rich and the great man has them too.

Not a great many years ago, a man of large estates and wealth drew near to the dark valley through which we all must pass. His state of health obliged him to leave his

baronial hall, his park; and woods, and broad, fertile lands, to seek relief at a mild watering place. He lingered there for a long time, and it was said by those about him, that his great distress at dying was, that he could not take his beautiful and beloved property with him to the grave!

I was myself passing through a town not far from the noble residence of the departed at this very time. We stopped to change horses, and in the centre of a broad, open place, in front of the inn, stood a hearse, dusty and travel-soiled. The horses were removed, and they and all the attendants were taking refreshment in the inn. My companion, on re-entering the carriage, said, "Whose remains do you think that hearse contains? Those of poor P—G—." I can never forget the feelings of that moment. The once proud, aristocratic owner of the woods we could almost at that moment see, was left the tenant of a hearse, with dingy plumes, nodding in unnoticed grandeur in the midst of the street where his carriage and four had so often rolled along. No one was near him; no one seemed to look at the hearse, or care who was in it; and all passed as unconcerned about their daily business, as if nothing sad, or solemn, or grand, or great, stood before them!

The possessor of the lordly lands of C— rests in a vault in lonely state, and the humble farmer sleeps beneath the "swelling sod" in a rural church-yard; but the same spirit animated the clay of which their earthly tabernacles were formed, in their widely different spheres. How loudly do the hearse and unpretending pall speak to our hearts! Each bears away the dead from all he loved and treasured, and carries him, a hapless burden, to his last narrow home! The "golden bowl" and the "pitcher," are alike broken "at the well;"—in the end they are the same. Nothing *earthly* can give peace at the last. "Vanity of vanities, saith the Preacher, all is vanity."

Whatever we set our hearts upon *here* betrays and forsakes us. Whether riches, or fame, or talents, or lands, or gardens, or stacks of corn. Let us remember this, and seek the only "Tower" into which man can run and be "safe," the only Treasure which will not "make itself wings and flee away."

ROYAL BOTANIC GARDENS, REGENT'S PARK, HORTICULTURAL SHOW, MAY 14.

THE most splendid exhibition, on one of the finest days, we ever witnessed. The Queen and Royal Family visited the Show early in the morning. The *Exotic Orchids* were shown in excellent condition; the large collections of *Stove and Greenhouse Plants* were decidedly superior to those at Chiswick; the *Greenhouse Azaleas* were not quite so good, excepting the collection from Ealing Park, which had considerably improved; *Cape Heaths* were shown in numbers, and in fine condition; the *Pelargoniums* were superior both in quantity and quality; and the *Roses in pots* were equal, but certainly not superior, in point of quality. We shall only notice some of the best which were not at Chiswick.

EXOTIC ORCHIDS.

There were nine collections, composed of 130 plants.

ACANTHOPHIPPIUM BICOLOR (Barnes), well bloomed.
ANGRECEM CAUDATUM (Mylam), eight of its long-tailed flowers.
BRASSIA VERRUCOSA (Carson), 11-spiked. (Woolley), six long spikes.
CATTLEYA INTERMEDIA (Mylam), eight-branched spike.
C. SKINNERI (Mylam), a fine variety, 25 flowers, with large, rosy purple lip, and white spot at the base. (Rae), 14 spikes, one 11-flowered.
C. MOSSIE SUPREBA (Franklin), finely grown.
CAMAROTIS PURPUREUS (Mylam), a mass 3 ft through. (Carson), 3 ft by 3 ft.
CHYSIS BRACTESCENS (Barnes), eight-flowered.
DENDROBIUM MONILIFORME (Williams), well bloomed.
D. PAXTONII (Williams), rare, orange, with a dark central spot.
D. CHRYSANTHUM (Blake), a fine specimen.
D. DENSIFLORUM (Barnes), six-spiked.
D. SULCATUM (Barnes), rare.
D. MACROPHYLLUM (Woolley), ten-spiked.
D. DIVARICATUM (Green), fine.
EPIDENDRUM AURANTIACUM (Williams), six-spiked.
E. HANBURI (Barnes), large and healthy, numerous spikes; named after his employer.
E. STANFORDIANUM (Barnes), densely bloomed.
E. CRASSIFOLIUM (Woolley), remarkably fine, 14-spiked.
E. TIBICINIS (Mylam), flower-stem 7 ft long, with eight large flowers. (Blake), as good.
LELIA CINNABARINA (Williams), two-spiked.
LYCASTE TIGRIANTHINA (Mylam), rare:

L. LAWRENCIANA (Franklin), new species.
ODONTOGLOSSUM LÆVE (Mylam), rare, eight flowers.
ONCIDIUM PAPILIO (Mylam), two of the best flowers we ever saw.
O. ALTISSIMUM (Green), large, and brightly coloured.
PHALÆNOPSIS GRANDIFLORA (Barnes), 17-spiked.
PHAIUS WALLICHII (Barnes), eight-spiked.
TRICHOPELIA COCCINEA (Blake), new.
VANDA ROXBURGHII (Carson), three-spiked.
V. TERES (Mylam), three fine flowers.
ZYGOPETALUM ROSTRATUM (Williams), eight-flowered, difficult to grow.

25 ORCHIDS. First prize, Mr. Mylam, gardener to S. Rucker, Esq. Second prize, Mr. Williams, gardener to C. B. Warner, Esq., Hoddesden.

15 ORCHIDS. First prize, Mr. Blake, gardener to J. H. Schröder, Esq., Stratford Green. Second prize, Mr. Franklin, gardener to Mrs. Lawrence, Ealing Park.

10 ORCHIDS. First prize, Mr. Carson, gardener to W. Farmer, Esq., Cheam. Second prize, Mr. Barnes, gardener to R. Hanbury, Esq., Poles, Ware. Third prize, Mr. Rae, gardener to J. Blandy, Esq., Reading. Fourth prize, Mr. Woolley, gardener to H. B. Ker, Esq., Cheshunt. Fifth prize, Mr. Green, gardener to Sir E. Antrobus, Bart., Cheam.

STOVE AND GREENHOUSE PLANTS.

Sixteen collections, comprising 170 plants.

ACROPHYLLUM VENOSUM (Cole), 2 ft by 2 ft, well managed.
APHELEXIS SESAMOIDES ROSEA (Cole), 2 ft by 2 ft, covered with flowers.
A. PURPUREA GRANDIFLORA (Williams), 2½ ft by 2½ ft.
ADENANDREA FRAGRANS (Green), 2½ ft by 2½ ft, a beautiful specimen, densely flowered.
A. SPECIOSA (Taylor), 4 ft by 4 ft, well flowered.
AZALEA MURRAYANA (Cole), 3 ft by 3 ft, profusely bloomed.
A. REFULGENS (Cole), 3 ft by 3 ft, well bloomed. (Frazer), 6 ft by 4 ft, profusely bloomed.
A. INDICA VIVICANS (Green), 5 ft by 3 ft, a most gorgeous plant.
A. SINENSIS (Green), 4 ft by 3 ft, splendidly bloomed.
A. INDICA ALBA (Taylor), 5½ ft by 4 ft, splendidly in bloom.
BOSSIEA DISTICHA (May), 4 ft by 5 ft, a splendid, rare plant, well bloomed.
B. LINOPHYLLA (Carson), an elegant drooping plant, 4½ ft high, covered with bloom.
BORONIA PINNATA (Taylor), 3 ft by 2½ ft.
CHOROZEMA HENCHMANNI (Croxford), 2½ ft by 2 ft. (May), 3 ft by 3½ ft, healthy and well bloomed.
C. LAWRENCIANA (Speed), 3 ft by 2½ ft.
CHIRONIA GLUTINOSA (Cole), 2½ ft by 2 ft, scarcely in bloom, but well grown.
DILWYNIA ERIOCEPHALA (Green), 3 ft by 2½ ft, a dense bush, thickly bloomed.
EPACRIS MINIATA (Cole), 3 ft by 3 ft, a splendid plant, profusely bloomed. (Croxford), 2½ ft by 3 ft.
E. GRANDIFLORA (Stanley), 4 ft by 3 ft, a noble plant, well bloomed. (Green), 3 ft by 3 ft, well flowered.
ERICA VENTRICOSA COCCINEA MINOR (Cole), 3 ft by 3 ft, most profusely bloomed.
E. HARTNELLII (Stanley), 2 ft by 2 ft, well bloomed.
E. PERSPICUA NANA (Stanley), 2½ ft by 2½ ft, densely bloomed.
E. PERSPICUA (Frazer), 2 ft by 2½ ft, densely flowered.
E. PROPENDENS (Williams), 3 ft by 4 ft, an immense plant, nearly weighed down with bloom.
ERIOSTEMON INTERMEDIUM (May), 2½ ft by 2½ ft, a well-flowered plant.
E. NERIIFOLIUM (May), 3 ft by 3 ft, fine, well bloomed.
E. BUXIFOLIUM (Cole), 3 ft by 3 ft, fine, well bloomed. (Taylor), 5 ft by 4 ft.
EUTAXIA PUNGENS (Speed), 2½ ft by 2½ ft, profusely bloomed.
FRANCISCEA MACROPHYLLA (Carson), well bloomed, with 24 heads of flowers.
GOMPHOLOBIUM POLYMORPHUM (May), 2 ft by 2 ft, trained to a low globular trellis, and densely bloomed.
HOYA CAENOSA (Taylor), 3 ft by 2½ ft.
HOVEA BELSIA (Stanley), 2½ ft by 2 ft, well managed and profusely bloomed.
H. PUNGENS (May), 1½ ft by 1½ ft, difficult to manage, covered with blossoms.
IXORA JAVANICA (May), 3 ft by 4 ft, a fresh plant, with scores of heads of blossoms.
LESCHENAUTIA BAXTERII (May), 2 ft by 3 ft, a fine, well bloomed plant.
L. FORMOSA (Cole), 2 ft by 3 ft, profusely covered with its rich blossoms.
L. BILOBA MAJOR (Cole), 2½ ft by 2½ ft, well bloomed.
PIMELEA SPECTABILIS ROSEA (May), 3 ft by 4 ft, completely hid by its fine heads of blossoms.
POLYGALA DALMAISIANA (Green), 2½ ft by 3 ft, well grown and profusely bloomed.
STEPHANOTIS FLORIBUNDA (Cole), 4 ft by 2½ ft, trained. (Speed), 5 ft by 2½ ft.
TROPÆOLIUM TRICOLOR MAJOR, STANLEYANA, and GRANDIFLORA (Stanley), three well grown and profusely flowered plants, trained to circular trellises.

30 PLANTS. Amateurs. First prize, Mr. May, gardener to Mrs. Lawrence, Ealing Park. Second prize, Mr. Cole, gardener to H. Collyer, Esq., Dartford. Third prize, Mr. Stanley, gardener to H. Berens, Esq., Sidcup, Kent.

30 PLANTS. Nurserymen. Messrs. Frazer, Lea Bridge, had a prize for their collection, the only one in this class.

20 PLANTS. Amateurs. First prize, Mr. Green, gardener

to Sir E. Antrobus, Bart. Second prize, Mr. Taylor, gardener to J. Costar, Esq., Norwood.

20 PLANTS. Nurserymen. First prize, Messrs. Frazer.

10 PLANTS. First prize, Mr. Croxford, gardener to H. Barnes, Esq., Stamford Hill. Second prize, Mr. Speed, Edmonton. Third prize, Mr. Williams, gardener to Miss Trail, Bromley. Fourth prize, Mr. Carson, gardener to W. T. Farmer, Esq., Cheam.

GREENHOUSE AZALEAS.

The tent in which the large collections, and the collections of Azaleas were placed, is on a sloping ground. The plants stand on raised terraces, the centre one being oval and the rest circles of different sizes, with half-circles at the sides. The front of the terraces is covered with green turf, and the flat space is covered with sand; this being done on a large scale (for the oval terrace alone held the two collections of 30 large plants) it shows off the plants, if well arranged, to the greatest advantage, particularly the Azaleas in bloom. Mr. Frazer's collection of ten of these gorgeous plants, by the judicious blending of colour so as to harmonize with each other, formed a picture of floral display that will not easily be forgotten. Her Majesty, and her royal and noble attendants, turned round and stood a considerable time admiring the beautiful arrangement. This, we hope, will have a good effect hereafter upon the exhibitors, and will cause them to study the effect of arrangement of colours more than they have hitherto done. The prizes and specimens were nearly the same as at Chiswick.

CAPE HEATHS.

The following we notice as additional to those at Chiswick.

- ERICA AMPULLACEA CAENUMBRATA (Cole), 1½ ft by 2 ft.
- E. AMPULLACEA VITTATA (Cole), 2 ft by 2 ft.
- E. CAVENDISHII (Over), 2½ ft by 2½ ft. (Rollison), 3 ft by 3 ft.
- E. DEPRESSA (Cole), well bloomed, 1½ ft by 2 ft.
- E. FLORIDA (Over), 1½ ft by 1½ ft, a rare heath. (Rollison), 2 ft by 2 ft.
- E. FAVOIDES (Rollison), 2½ ft by 2 ft.
- E. FAVOIDES ELEGANS (Smith), 3 ft by 3 ft. (Over), 2 ft by 2 ft.
- E. MAC NABBIANA (Smith), 1½ ft by 2 ft. (Veitch), 1½ ft by 2 ft.
- E. METULÆFLORA (Veitch), 1½ ft by 2½ ft, the true.
- E. PERSPICUA NANA (Cole), 2 ft by 2 ft. (Over), 2½ ft by 2 ft. (Rollison), 2½ ft by 2½ ft.
- E. PRÆGNANS (Rollison), 3 ft by 3 ft.
- E. VESTITA ALBA (Smith), 2½ ft. by 3 ft.
- E. VENTRICOSA NANA (Cole), 1½ ft by 2 ft.
- E. VENTRICOSA SUPERBA (Cole), 2½ ft by 2½ ft.
- E. WESTPHALINGIA (Smith), 2½ ft by 3 ft.

12 PLANTS. Amateurs. First prize, Mr. Smith, gardener to W. Quilter, Esq., Norwood. Second prize, Mr. Cole. Third prize, Mr. Over, gardener to W. McMullen, Esq., Clapham.

12 PLANTS. Nurserymen. First prize, Messrs. Rollison, Tooting. Second prize, Messrs. Veitch, Exeter. Third prize, Messrs. Fairburn, Clapham. Fourth prize, Messrs. Frazer, Lea Bridge.

NEW AND RARE PLANTS.

Messrs. J. A. Henderson and Co., Pine-Apple-place, had a silver medal for FRANCISCEA CONFERTIFLORA, a finer species than the well known *F. latiflora*; the foliage is a deep green, large, and glossy; the flowers are disposed in clusters, and are of a deep violet colour. Besides this, Messrs. Henderson had prizes awarded for CEANOTHUS PAPILLOSUS, an elegant, blue-flowered, hardy shrub, from California; and for a new PULTENÆA, named JUNIPERINA, with neat heads of orange and scarlet pea-shaped flowers; also for a PULTENÆA, unknown, of a free flowering habit, and lighter coloured flowers. Mr. E. G. Henderson had a prize for ALLAMANDA NERIIFOLIA, with smaller flowers, but of a more bushy habit than the older species; also for HEBECLINIUM IANTHINUM, a bluish flowered plant, blooming in early spring. Mr. Ambrose, of Battersea, obtained a prize for a new rose-coloured HYBRID RHODODENDRON, with small oval leaves. Messrs. Standish and Noble, of Bagshot, showed a SEEDLING RHODODENDRON, named VESUVIUS, with large, well-formed trusses of rich crimson flowers; also a DOUBLE-FLOWERED AZALEA, a seedling, named THE GLORY OF SUNNING HILL; both these were awarded a prize. Mr. John Waterer, of Bagshot, had a fine rose-tinted RHODODENDRON, named GEMMIFERUM; this is said to be a hybrid between *R. Azaleoides* and *R. Russellianum*; this also obtained a prize. A silver medal was awarded to Messrs. Veitch for a beautiful plant of the new DEUTZIA GRACILIS, and a prize of the same value was obtained by Mr. Baumann, nurseryman, of Ghent, for the same. A prize, for a plant of economical interest, was awarded to Messrs. Rollison, for a fine SARRACENIA, from North America, with curious pitcher-like leaves, fully three feet high.

Many other prizes were awarded, but for collections little differing from those at Chiswick.

HARDY HERBACEOUS PLANTS SUITABLE FOR SPRING DECORATION.

(Continued from page 118.)

I THINK it will be conceded by all that few plants look so well when not in bloom as the old *Double Catchfly*, and when in bloom none look better, therefore, I strongly advise those who have not yet tried it for furnishing their beds in winter and spring, to begin betimes, and propagate what few plants they may have or can obtain. A medium sized plant may be pulled into a great many pieces, retaining as much root to each as can be got; but they grow very freely without any, if put in some shady place and watered if the weather be dry. They certainly require less attention than most plants, and in autumn will be found nice stocky plants, furnishing a bed pretty well at once, and keeping so all the winter, and towards the end of May rewarding you with a rich crop of blossom. I invariably plant several beds of it in autumn, and on some occasions have lifted them during the winter when some alterations were wanted in the arrangement of the bed, and have planted them again without their seeming to suffer from the change, so exceedingly hardy are they. It is only necessary to divide them after flowering, and plant them in some suitable place to gain strength during the summer months.

Another useful plant with blue flowers is the *Aubretia Deltoidea*, which, though I have not used it much, seems well adapted for the purpose. It appears to partake of the character of the *Arabis* tribe, but is less rampant in its growth than the white one of that genus. Without much trouble it seems to increase pretty fast, and I have no doubt will be found useful.

It seems a pity that some of the numerous species of the *Dianthus* and *Campanula* species do not flower a month or more sooner, as they would afford us great variety. As it is, I have not been able to make much use of them. I have sometimes put in a bed or two of the *Canterbury Bells* in autumn, but its foliage is not inviting during winter, and as the greatest part of its growth takes place after the first of May, the succeeding crop cannot well be planted with it. I have, on more than one occasion had a bed of the *Campanula Grandis*, and removed it after flowering, but that is attended with a trouble that the season will not always allow of being done justice to; and a small white *Campanula* called (I believe) *Pumilla* has always such a weedy look, that I dismissed it altogether, and however pretty *Sweet Williams* and others of the *dianthus* tribe undoubtedly are, their not flowering until the middle of June, prevents their being profitably used for this kind of work.

One of the earliest of yellow flowers is the old, yet ever useful, *Linum flavum*, than which few can excel for brilliancy; but it is almost deserving a better place than the transient one of serving a temporary purpose in spring. However, it is well adapted for that, and unless in very damp situations it stands the winter very well.

There is a dwarf early flowering *Phlox*, called *verna*, with its varieties, which I have seen make a very gay bed, but whether it will allow of being planted in autumn and flowering well the following spring, or not, I cannot say, having never tried it: but I should suppose it would. Most of the other species flower only late in the summer, and, though extremely beautiful, they are more unfitting ornaments to the mixed border than the parterre.

In drawing these notes to a close, it need not be inferred that the list is at all exhausted; I intend to try several others, and have made partial trials of some, but not sufficient to give a decisive opinion upon their merits. But so far as I have tried, it appears that all early flowering herbaceous plants must have stored up food the preceding summer to form the embryo buds, which require no extraordinary additional nutriment to develop at the appointed time. Not so, however, those which do not bloom until a later period. With these a considerable growth takes place during the current season, exhausting the bed and robbing the ensuing crop, whose welfare it is most important to secure. For that purpose it is evident that gross growing plants must be used with caution, as for instance the *Lupinus polyphyllus* and its varieties, which bloom and look well at the end of May. Scarlet *valerian* also ought to be chopped round with the spade as

directed, for they are sad robbers of less robust neighbours; and as their purpose is only to serve the temporary duty of furnishing the beds when more showy ones could not exist, care must be taken that they do not exercise their officious services too long.

In conclusion, let me beg of those having used other plants for the same purpose to report their success. It is a subject fraught with interest to the flower-gardener, as it must be admitted that each succeeding season proves the futility of attempting to get an early bloom of the plants usually planted out as summer bedders, and the present season does not promise any better times than its predecessors. At the same time I admit that I have a strong dislike to resort to annuals, for the temporary purpose treated of; their more delicate habit being so easily turned over by the wind, and other casualties more than counterbalancing, in my opinion, the more gay appearance they present, for a very few days only, over their more robust neighbours, the much-neglected herbaceous plants..

S. N. V.

TEMPERATURE UNDER GLASS.

I HAVE grown vines for several years under glass without fire heat, and though I have not kept a regular journal of the heat compared with that out-of-doors, I have occasionally done so.

1851.	Lowest out-of-doors.	Lowest of my vinery.
Jan. 24th	25	35
" 28th	35	42
" 30th	32	38
Feb. 4th	27	32
" 16th	23	35
" 22nd	23	34
Mar. 3rd	30	38
" 5th	39	45
" 7th	20	31
" 8th	33	42
" 9th	35½	42
" 10th	34	40
" 27th 1850	2	23

When the sun shines, the thermometer in the shade under glass will rise 20°, 30°, 40°, and even at times 50°, above the thermometer in the shade out-of-doors. Thus, the highest temperature in the winter was on February 16th, 42° out-of-doors, whilst in the vinery it rose to 80°. I find vines in pots under glass come into leaf sooner than the vines which have their roots in the ground. On the 10th of March, 1845, 1846, and 1847, my vines under glass, without any fire heat, were in leaf; whilst in 1848 and 1849 this took place on the 19th of March. In 1850, March 10th, vines in pots in leaf; on the wall on the 18th.

I find even in cloudy weather the vinery is warmer than the air out-of-doors.

REV. C. A. A. LLOYD,
Whittington, Oswestry.

TO CORRESPONDENTS

*** We request that no one will write to the departmental writers of THE COTTAGE GARDENER. It gives them unjustifiable trouble and expens. All communications should be addressed "To the Editor of The Cottage Gardener, 2, Amen Corner, Paternoster Row, London."

SCARLET GERANIUMS (*Lady Bird*).—The leaves came in very good condition. Those of *Baron Hugel* have the largest and darkest horse-shoe mark of any we have seen; a seedling raised at Cossy Hall being the next best, in that respect, of all we have grown. Is the *Baron* so well marked in the autumn? if so, and "being very like Tom Thumb in colour, truss, and growth, but not nearly so long in the flower-stalk," we should like to meet with him at the "Exhibition," or nearer home, for he must certainly be a first-rate bed-fellow where the soil suits him. The leaf of the improved seedling you sent can give no index to the flowers; being so small, however, is a very great recommendation, and, should the flowers not come up to your expectation, we would still keep the plant for a breeder. The leaves of all our scarlet geraniums are outrageously too large. Seedlings in this class often improve in the size of the truss for the following two years; *Punch* was in his fourth year before he showed more than 70 flowers in a truss.

NAMES OF INSECTS (*E. P., Exeter*).—The brown weevil found on the broad beans in great numbers is the *Sitona pleuritica*, closely allied to the weevil (*Sitona linearis*) which nibbles the leaves of the common pea, and we have no doubt this does the same to the beans. The green insect is the *Phyllobius argentatus*, which is found on various plants, on the leaves of which it subsists; it is a beautiful object for the microscope.

PRUNING ROSES (*Jane*).—We should be very sorry to lose you either as a correspondent or subscriber. We do not justify our seeming neglect, but you know the best of us "nod" at times; and the least push

at the elbow will set us to the desk immediately. All roses whatever should be pruned before they come into leaf, unless they are very strong indeed. Every weakly rose, no matter what class it belongs to, ought certainly to be pruned at the end of October: the reason is well explained by one of our contributors two years back. Last year's shoots of all the hybrid perpetuals, and some other free-growing sorts, will do to make layers of in July; but the Moss, Cabbage, and many of the old roses, will not answer so well except from the current year's growth, but much depends on the strength of the plants. "Cuttings with a heel" you and the gardener have been "splitting straws" about. You are both wrong, and each of you is right. It does not matter one straw whether the heel is smoothed, trimmed, or not dressed at all, and if it is it is all the same. The roots issue from between the bark and the wood; and if the bark is torn or jagged, in pulling the shoot out of the socket, the edges of the bark should be cut smooth all round. But why not prove your positions by trying six heeled cuttings one way and half a dozen the other? By all means pick off the early flower-buds from the newly rooted rose cuttings.

QUASSIA FOR DESTROYING THE GREEN FLY.—The lady answered above, to show she is not offended past forgiveness, writes as follows:—"As I have not seen *quassia* mentioned as a remedy for the attacks of the green aphid on the rose, in any of your papers, I think it may not be uninteresting to you at this season to hear that I used it last year with the most complete success. I have no merit in the discovery, as I only followed the directions in Mrs. Loudon's 'Ladies' Companion to the Flower Garden.' Boiling 4 oz. of *quassia* chips to one gallon of water, and gently dipping the shoots (or bunches of buds) covered with the aphid in a basin of this water (cold); or, where the branches would not allow of this, I washed them with a soft sponge or brush dipped in the basin. It did not injure the coming flowers the least; and what was singular was, that I never saw a single living aphid on any branch so treated during the whole of the after season, while the fresh buds and fresh shoots which continued to be put forth during the summer were often covered with them. I ought to mention, that I shook the branch or bud in the water till it was somewhat cleared of the aphid."

ARTESIAN WELL (*W. N. G.*).—You can only have this formed by boring; and there are men in Norfolk, we dare say, as there are elsewhere, who would undertake the job. An advertisement would bring you many tenders probably.

KITCHEN GARDEN (*J. S., Clonmel*).—If your two men and a woman employed in your proposed walled kitchen-garden of one rood and sixteen perches do not keep you fully supplied with vegetables all the year, be assured that the head man does not know his business. This is always supposing that asparagus and potatoes are not grown in it, and that the soil is of ordinary quality, and manure to be had as required. You ought at this time to have your table supplied with asparagus, cabbage, cauliflower, peas, beans, lettuce, &c. As for giving you a statement of the divisions into which the garden should be divided, rotation of crops, &c., it would take half of our pages to-day to give the details. If you have our first volume, refer to what is said at pages 184-5-6 on the subject. If you have not the volume, send eight postage stamps to our office, and tell them to send No. 17 to your direction. It is a double number, and the prepaid postage will be fourpence.

WORMS IN POTS (*C. E. H.*).—To dislodge these, give the earth in the pots a good soaking with lime water.

POETRY OF FLOWERS (*Alpha*).—You are quite wrong in supposing the idea modern. So far from it, we have, even in the English language, a demonstration to the contrary, in a volume nearly 300 years old. It is very rare, and is entitled, "POESY: OR, NOSEGAY OF LOVE, conteynyng the Poesies of sondrye Flowers, Hearbes, and Plantes, that are put commonly in nosegayes, directed to the True Lovers, 1580."

CHEAP BOOK ON GARDENING (*M. N. E.*).—Not one is either so cheap or so full of the information you require as *The Cottage Gardeners' Dictionary*. It is about half completed, and is published in sevenpenny monthly parts.

HENS DROPPING SHELL-LESS EGGS (*P. G.*).—Keeping your hens entirely on barley may cause this; give them once a day a meal of moist food, such as scalded pollard, and see that they can have access to lime rubbish. The egg taken away within three days of hatching was removed probably by a rat.

DORKING FOWLS.—The Rev. G. Marsh, *Amptill Rectory, Bedfordshire*, writes to us as follows:—"If any of your correspondents are in want of some thorough-bred, white Dorking Fowls, I could supply them with eight hens and a cock for 35s. Should any one prefer a half-bred Game and Dorking cock, I would substitute it for the Dorking at the same price. I consider the cross between the Game and the Dorking an improvement. I part with them solely because my stock is increased beyond the accommodation I can give them. On the receipt of a post-office order for the money I will have them carefully packed and forwarded."

GREENHOUSE (*W. Q., a Novice*).—Let the angle of the roof be 40°; glass, 16 ozs. to the foot, 15 inches wide, and one foot long, because the bars should be 15 inches apart. The vine, with its roots in the house and its head outside, will do all the better, for the roots should always be in action before the buds. With your greenhouse and pit you ought to have some kind of flower in bloom in each month. If water is near the surface, or is liable to be so in wet weather, do not sink any part of your pit below the surface.

CUTTING OF DOUBLE-PINK HAWTHORN (*One who has a nook in her father's garden*).—You cannot attempt to strike this with any probability of success. Put some of the buds into the common hawthorn, shading the buds, after budding, by tying a laurel leaf over them.

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14 " " " " " "	2	6	
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18 " " " " " "	3	6	
20 " " " " " "	4	0	
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2 in. diam.	0 2 ditto	0	3
3 " " " " " "	0 3 " "	0	4
4 " " " " " "	0 4 " "	0	5
5 " " " " " "	0 6 " "	0	7
6 " " " " " "	0 8 " "	0	10
7 " " " " " "	0 10 " "	1	1
8 " " " " " "	1 0 " "	1	4
9 " " " " " "	1 2 " "	1	8
10 " " " " " "	1 4 " "	2	0
11 " " " " " "	1 6 " "	2	8
12 " " " " " "	2 0 " "	3	6
13 " " " " " "	2 6 " "		
14 " " " " " "	3 6 " "		
15 " " " " " "	4 0 " "		

CUCUMBER TUBES.		s.	d.
24 inches long	2	0	
22 " " " " " "	1	10	
20 " " " " " "	1	8	
18 " " " " " "	1	6	
16 " " " " " "	1	4	
14 " " " " " "	1	2	
12 " " " " " "	1	0	

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With top.			
3 in. diam.	0 3 " "	0	4½
4 " " " " " "	0 5 " "	0	7
5 " " " " " "	0 7 " "	0	9
6 " " " " " "	0 9 " "	1	0
7 " " " " " "	1 0 " "	1	3
8 " " " " " "	1 3 " "	1	7
9 " " " " " "	1 6 " "	2	0
10 " " " " " "	2 0 " "	2	6

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20 inches by 14 inches . .	13	0
22 " " " " " "	16	0
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28 " " " " " "	24	0
30 " " " " " "	24	0

PASTRY PINS.		Glass.	Opal.
14 in. long	0 0 " "	3	3
15 " " " " " "	2 0 " "	0	0
16 " " " " " "	2 0 " "	3	6
18 " " " " " "	2 3 " "	4	3
21 " " " " " "	2 6 " "	0	0
24 " " " " " "	3 0 " "	0	0

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sist nature in our cold climate. The fruit grows to a larger size, and its richness is increased.

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Rough Plate.			
1-8th inch thick	0	10	
3-16ths " " " " " "	1	0	
½ " " " " " "	1	3	
¾ " " " " " "	2	0	
Sheet.			
16 oz.	0 6	26 oz.	0 10
21 " " " " " "	0 8	32 " " " " " "	1 0

HAND GLASSES.		s.	d.
12 inches	3 0 glazed	6	0
14 " " " " " "	3 6 " "	7	0
16 " " " " " "	4 0 " "	8	0
18 " " " " " "	4 6 " "	9	0
20 " " " " " "	5 0 " "	10	0
24 " " " " " "	6 0 " "	12	0
Painted and Glazed, with 16oz. Sheet Glass.			
If Open Tops, at 1s extra.			

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Size.	Rough Plate.				Sheet.			
	½ inch thick.	¾ inch thick.	1 inch thick.	1½ inch thick.	16 oz.	21 oz.	26 oz.	32 oz.
24 inches by 12 . .	s. d. 1 6	s. d. 2 0	s. d. 2 8	s. d. 5 0	s. d. 0 11	s. d. 1 3	s. d. 1 9	s. d. 2 0
20 " " " " " "	1 5½	1 11	2 7	4 10	0 10½	1 2½	1 8½	1 11
22 " " " " " "	1 5	1 10	2 6	4 8	0 10	1 2	1 8	1 10
20 " " " " " "	1 1½	1 6	2 0	3 8	0 8½	1 0	1 5	1 6

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WEEKLY CALENDAR.

M D D	JUNE 19—25, 1851.	WEATHER NEAR LONDON IN 1850.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bef. Sun.	Day of Year.
		Barometer.	Thermo.	Wind.	Rain in In.						
19 TH	Stag Beetle seen.	29.906—29.822	60—43	S.W.	0.02	44 a. 3	18 a. 8	11 58	20	0 51	170
20 F	Q. VICTORIA'S ACC. Borage flowers.	30.139—30.086	75—50	W.	—	44	18	morn.	21	1 4	171
21 S	Q. VICTORIA PROCLAIMED.	30.118—30.060	75—42	S.W.	—	44	18	0 20	22	1 17	172
22 SUN	1 SUN. APT. TRIN. Dropwort flowers.	30.166—30.011	78—48	W.	—	45	19	0 38	23	1 30	173
23 M	Cow Parsnip flowers.	29.941—29.822	85—52	S.W.	—	45	19	0 57	24	1 43	174
24 TU	MIDSUM. DAY. NAT. JOHN BAPTIST.	29.904—29.880	89—46	N.E.	—	45	19	1 18	25	1 56	175
25 W	Great Knapweed flowers.	29.979—29.907	79—53	S.	—	45	19	1 39	26	2 8	176

MEMORY scarcely brings to us a trace of any remembrance previous to that when we were used to be placed at a table, to allow the nursery household to be at peace, whilst we fumbled over, and dog's-eared a small black-lettered quarto volume, in which there were many rude woodcuts, but one alone of which remained unforgotten, even until manhood. It represented a man down on one knee, dibble in hand, preparing to plant a vegetable, which, according to the artistic notions then prevalent, did not outrage common sense, though of a size beyond all proportion, compared with either the dibbler, or his implement. A score of years passed by, and then we saw the book again, and now, when two more lustums have gone by, we once again have the book before us, and we still wonder, as we wondered as we sat at the old three-clawed nursery round oak table, what that plant can be the man is in such vigorous earnest about planting. The volume containing this long-remembered example of dibbling bears this comprehensive title:—

"*The Gardeners' Labyrinth*, containing a discourse of the Gardeners' life, in the yearly travels to be bestowed on his plot of earth, for the use of a garden, with instructions for the choise of seedes, apt times for sowing, setting, planting, and watering, and the vessels and instruments serving to that use and purpose: wherein are set forth divers herbers (arboours), knots, and mazes, cunningly handled for the beautifying of gardens. Also the physick benefit of each herb, plant, and flower, with the virtues of the distilled waters of every of them, as by the sequel may further appear. Gathered out of the best approved writers of Gardening, Husbandry, and Physick, by DIDDYMUS MOUNTAINE." This was printed in 1577, and we have vainly endeavoured, both from that, and from a later edition, to glean some particulars of the author. This later edition bears the date of 1656, and the title is somewhat altered, beginning by stating that it is "*The Gardeners' Labyrinth, or a new Art of Gardening, wherein is laid down new and rare inventions, and secrets of Gardening not heretofore known*," then entering into the details as in the old title page, but concluding by stating that it is not only collected from other authors, but also from "forty years experience in the art of gardening." The dedication of the first edition to Lord Burghley, is signed by *Henry DeThicke*, and states that he publishes the work in obedience to his "promise plighted unto his friend lately interred," and those two brief sentences embrace all the information we have been able to acquire concerning the author. Of the editor of his posthumous publication, we have somewhat more information, for he fortunately was a graduate of Oxford, and Oxonians fortunately had Anthony Wood for their biographer. Yet, this information extends no further than that in 1578, *Henry DeThicke*, Master of Arts, was admitted Batchellor of Law, and in 1581, Doctor of Law, being at the time Archdeacon and Chancellor of Carlisle.

In the first edition is given a list of twenty-eight "authors from whom this work is selected." It includes all the Roman and Geoponic writers, concluding with Galen, and there is not a single reference, that we can find, intimating a suspicion that directions, suitable for Italy and Greece, are not applicable to our more northern latitudes. Yet, there are many directions scattered through the pages indicating that the author practiced the art on which he undertook to lecture, and revealing that many of our practices, only lately much enforced as those adopted by good gardeners, are only revivals of ancient gardening. For instance, our use of liquid-manure is thus forestalled, as well as our knowledge of the importance of using tepid water to our plants. "To the water standing in the sun, if the owner or gardener mixt a reasonable quantity of dung, after his discretion, this mixture no doubt will be to great purpose, for as much as the same gently watered, or sprinkled abroad, procureth a proper nourishment to the tender plants and young buds coming up."

One of the watering-pots then employed was somewhat peculiar and ingenious, being controlled by excluding the atmospheric pressure, and is thus described. "The common watering-pot with us for the garden beds hath a narrow neck, big belly, somewhat large bottom, and full of little holes, with a proper hole formed on the head to take in the water, which filled full, and the thumb laid on the hole to keep in (out) the air, may on such wise be carried in handsome manner to those places by a better help aiding in the turning and bearing upright of the bottom of this pot, which needfully require watering." He then describes "the watering-pot best to be liked, that is much used in the chiefest gardens about London," which is exactly our present watering-pot, excepting that it was then made of copper. Mountain also describes the mode of irrigating the beds, and gives a drawing both of that and of the plan adopted "by some which use to water their beds with great squirts made of tin." The woodcut shews that the great squirt, resembling one of our garden engines, was plunged into a tub of water, and the water forced through a rosed pipe by means of the vertical motion of the syringe's plunger.

Near to the above work, for it was published in the following year, stands a volume bearing this title:—

"*A Perfite Platforme of a Hoppe Garden*, and necessary instructions for the making and maintenance thereof, with notes and rules for reformation of all abuses commonly practiced therein, very necessary and expedient for all men to have, which in any wise have to do with hops. Now newly corrected and augmented by REYNOLD SCOT. 1578."

In the dedication to Sir Wm. Lovelace, "Serjeant at the Law," the

author asks him to dig "unto the bowels of the ground, and to seek about his house at Beddersden, for a convenient place for a Hop Garden," and to do this promises "the effect of myne experience," and there is no doubt that he spoke the truth, for it is one of the most original and correct books on the culture of any crop that had then issued from the press. Indeed, the author, as we shall see presently, was no ordinarily-minded man, but one of those, who, in advance of their countrymen, point out their errors, and in return are derided, persecuted, and unregarded. It was then the common practice to make ale of malt without any other addition, and Mr. Scot laboured to show that its unwholesomeness and bad-keeping qualities arose from not using hops in its brewing. The neglect of their culture, and their consequent dearthness, was one of the reasons of their not being employed, and he says, energetically—"It grieves me when I see the Flemings envy our practice (in the cultivation of the soil), who altogether tend their own profit, seeking to impound us in the ignorance of our commodities, to cram us with the wares and fruits of their country—sending into Flanders as far as Poppering, for that which we may find at home in our backside." Backside, it may be as well to explain, meant in those days, the inclosed ground behind a residence.

Mr. Scot then proceeds, in a very systematic order, to give good directions for hop-growing, from the time of first planting, to the drying of the produce. "Upon every acre," he says, "you may erect seven, eight, or nine hundred hills; upon every hill well-ordered, you shall have 3lbs. of hops at the least. Two pounds and a half of these hops will largely serve for the brewing of one quarter of malt. One hundred pounds of these hops are commonly worth 26s. 8d." It was then a practice "to burn the neather part, or great end of the poles, to the end they should last or endure the longer," though Mr. Scot very unwisely condemned the procedure as "unnecessary trouble."

We have no space for further extracts, for we must find room to show why we have said Mr. Scot was a man of no ordinary mind, and for this purpose we need but point to the work he published in 1584, and which at the same time shows the great depth of his researches, and the uncommon extent of his learning. It is intitled, "*The Discoverie of Witchcraft*," and reprinted in 1651, with this title: "*Scot's Discoverie of Witchcraft*," proving the common opinion of witches contracting with devils, spirits, familiars, and their power to kill, torment, and consume the bodies of men, women, and children, or other creatures, by diseases or otherwise, their flying in the air, &c., to be but imaginary erroneous conceptions and novelties. Wherein also the practices of witchmongers, conjurers, inchanters, soothsayers, also the delusions of astrology, alchemy, legerdemain, and many other things, are opened, that have long lain hidden, though very necessary to be known for the undeceiving of judges, justices, and juries, and for the preservation of poor people, &c. With a treatise upon the nature of spirits and devils," &c. In the preface to the reader he declares, that his design in this undertaking was, "first, that the glory of God be not so abridged and abased as to be thrust into the hand or lip of a lewd old woman, whereby the work of the Creator should be attributed to the power of a creature: secondly, that the religion of the gospel may be seen to stand without such peevish trumpery: thirdly, that favour and Christian compassion be rather used towards these poor souls than rigour and extremity," &c.

A doctrine of this nature, advanced in an age when the reality of witches was so universally believed, that even the great bishop Jewel, touching upon the subject in a sermon before queen Elizabeth, could "pray God they might never practise further than upon the subject," must needs expose the author to animadversions and censure; and, accordingly, a foreign divine informs us, though Wood says nothing of it, that Scot's book was actually burnt. We know, however, that it was opposed, and, as it would seem, by great authority too; for James I., in the preface to his "*Demonologie*," printed first at Edinburgh, 1597, and afterwards at London, 1603, observes, that he "wrote that book chiefly against the damnable opinions of Wierus and Scott; the latter of whom is not ashamed," the king says, "in public print to deny that there can be such a thing as witchcraft, and so maintains the old error of the Sad-duces in the denying of spirits."

Mr. Scot was a younger son of Sir John Scot, of Scot's Hall, near Smeeth, in Kent, where he was probably born; and, at about seventeen, sent to Hart Hall, in Oxford. He retired to his native country without taking a degree, and settled at Smeeth; and, marrying soon after, gave himself up solely to reading, to the perusing of obscure authors, which had by the generality of scholars been neglected, and at times of leisure to husbandry and gardening.

This sensible, learned, upright, and pious man (for we know that he possessed the two first of these qualities, and he is universally allowed to have had also the two last) died in 1599, and was buried among his ancestors in the church at Smeeth.

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-four years, the average highest and lowest temperatures of these days are 72.2°, and 50.4°, respectively. The greatest heat, 93°, occurred on the 22d, in 1846, and the lowest cold, 37°, on the 25th, in 1835. During the period 97 days were fine, and on 71 rain fell.

SOME queries relative to the premature dropping of Fuchsia buds, which will be found in our last page, added to an enquiry as to the temperature water should possess when applied to the roots of plants, induces us to resume the observations we somewhat abruptly concluded at page 94 of our last volume.

It has been maintained, that water is the sole food of plants; but all experiments are inconclusive which are presented as supporting the theory. In the first place, all waters contain earthy, saline, and organic matters: even distilled water is not pure, as Sir H. Davy has proved; and rain water, Margraaf, Liebig, and others, have demonstrated to be much less so. No plants, except water plants, growing in water only, will ever perfect seed; and the facts, that different plants affect different soils, and that a soil will not bear through a series of years the same crop, whereas it will bear a rotation of different ones, demonstrate that they each take different kinds of food from the earth, and not that universal one, water, which is ever present and renewed.

So far, indeed, from water being the sole food of plants, they are injured and destroyed by its superabundance in the soils sustaining them. Such soils are always colder than well-drained soils, inasmuch as that the same quantity of caloric (heat) which will warm the earth four degrees, will only warm water one degree—or, to use the language of the chemist, the capacity for heat of water is four times greater than that of the earths. Secondly, the vegetable decomposing matters in a soil, where water is superabundant, give out carburetted hydrogen, acetic, gallic, and other acids, instead of carbonic acid gas and ammonia,—products essential to healthy vegetation. Palliatives for such evils are the application of lime, or its carbonate, chalk, to the soils in which these acids have been generated; and, indeed, after they have been formed, such an application is essential, though the radical cure and preventive of recurrence—thorough drainage, be adopted.

To plants in pots, good drainage is not less essential than to those in our borders. To secure this, not only should at least two inches of rubbly materials and charcoal be placed beneath the soil put into the pots, but the soil itself should be allowed to retain its pebbles, instead of having them sifted out, as was the ancient practice.

Drainage, however, is not the only desideratum to potted plants, for they have many other difficulties to contend against, from which those in the open soil are preserved. The open soil is always a few degrees warmer than the exterior air; but, owing to the evaporation from the sides of garden-pots, this is rarely the case with the soil in them. To preserve this salutary warmth to the roots, a double pot has been suggested.

The importance of following the dictate of nature, to keep the roots of plants, natives of the temperate zone, as warm or warmer than the branches, has been too much neglected by the gardener in his forcing department. In the vinery, for example, the stem and roots are too often exposed to the rigour of winter, whilst the buds are expanding within the glass shelter in a tem-

perature of 60°. A vine so treated is like the felled elm, which, allowed to retain its bark, though rootless, puts forth its leaves in the spring, expands its buds, and advances through the first stages of growth merely from the inspissated sap stored within its stem and branches. This is no mere suggestion of fancy; for repeated experiments have shown that hothouse vines, with their roots thus kept torpid by exposure to cold, had not their buds burst; whilst other vines, treated in all respects similarly, but with their roots kept genially warm, were actually in bloom.

Although an excess of water applied to the roots of plants is injurious to them, yet all of them are benefited by a due supply of that liquid, and that supply has to be regulated by the amount of their daily transpiration. The gardener knows that this differs in every species, and during different seasons. For instance, in a dry hot day, a sunflower, three feet and a half high, transpired 1 lb. 4 oz., being seventeen times more than the human body; during a hot dry night, 3 ozs.: during a dewy night there was no transpiration; and during a rainy night it absorbed 3 ozs.

Therefore the gardener finds it best to apply water during dry weather, early in the morning, just before the chief demand occurs, which is from six A.M. till two in the afternoon; and during moist weather he refrains from the application entirely. Then, again, the gardener keeps his Agaves and other fleshy-leaved plants in a dry stove, for they transpire but sparingly in proportion to their mass, and require watering but seldom, and then abundantly; for they take up, as in their native sandy soils, a large supply, and retain it pertinaciously in defiance of the long-protracted droughts to which they are exposed.

In the same species we have always found varieties transpire abundantly, and require a larger supply of water in proportion to the extent of their transpiring surface. Thus the broad-leaved fuchsias and pelargoniums transpire from two to three times as much as those varieties which have smaller and less abundant foliage.

Then, again, as to the temperature at which water should be applied, it may be taken as a general rule, that it should be 5° warmer than the soil in which the roots are growing. This, of course, varies, for, as we have observed in *The Cottage Gardener's Dictionary*, "Every plant obviously will have a particular bottom heat most congenial to it. Plants growing in open plains, as at the Cape of Good Hope, will require a higher bottom heat than those growing in the shade of the South American forests, though the temperature of the air out of the shade may be the same in each country. That gardener will succeed in exotic plant-culture best, who, among his other knowledge, has ascertained the relative temperature of the air and soil, in which any given plant grows naturally. At present, such information from actual observation is not obtainable, but it is not difficult to ascertain the maximum and minimum temperature of the air of a country; and this being obtained, the gardener may adopt this as a safe rule:—Let the bottom heat for plants of that country be 5°

higher than the average temperature of each month; that is, if the lowest temperature of the month is 40°, and the highest 70°, the average is 55°, and if we add 5° to that, we shall have 60° as the bottom heat for that month. If the average maximum temperature of the air only be known, let the bottom heat be less by 10° than the *maximum* temperature of the air."

We have stated the general rule as to the temperature of water for the roots of plants, but there are exceptions. For instance, the *Calceolaria*, being a native of high mountain ranges, in South America, and accustomed to be watered by their cold moistures, succeeds best when treated with water of a lower temperature than that of the soil.

GARDENING GOSSIP.

THE *Plants in the Great Exhibition* do not improve, and we were not a little astonished to see on Messrs. Paul's stand plants with the *Roses* on them dead and brown, as if they had been placed there and forgotten. Knight and Perry's stand are rich in *Conifers*, and some very pretty exotics. Loddige's, of Hackney, have noble *Palms* there, which look none the worse for their sojourn among the wonders; but the stand which caps them all is Messrs. Lane and Sons. The noble *Azaleas*, *Rhododendrons*, *Roses*, and other flowering plants are as fresh as in their own nursery.

The Exhibition owes much of its effect to the numerous groups of plants, which, however, require to be kept up well by fresh supplies, or they become worse than a vacant space.

There is some talk of a *Sale of the Dry Roots of the Tulip* at taking up time. Several growers who have scarce flowers to make up twenty or thirty lots, each to be delivered at the time of sale with a guarantee.

There are many good flowers scarce among the growers, and it was considered that a sale, which took place some years ago, when Baron, Delaforce, Wilmer, Lawrence, and some others, put good flowers up for competition, encouraged young cultivators to come out well, and improved many beds. If it takes place, the time will be early in June.

Mr. Lawrence's bed of *Tulips* (sold Friday, the 30th), although only consisting of a hundred and forty rows, produced between three and four hundred pounds. They were divided into one hundred and ninety-nine lots, and occupied the auctioneer a little over three hours; about a lot a minute.

Every lot but one sold. The exception was a lot not bid for, and the auctioneer passed it; nor would he go back again. This rather spurred the bidders on to the rest of the sale.

Is the *Cineraria* to lose the notch at the ends of the petals? Assuredly there are hundreds of seedlings that come without it, but they have other faults; still it shows there is hope that we may obtain better forms with the same desirable point attained. One of the brightest varieties (Lady Hume Campbell) has the notch very bad. The brilliant colours and close petals save it; but the notch is exceedingly conspicuous. It must be remarked, too, that for the most part those which are perfectly free from the notch, have as bad, or nearly as bad, a fault; the petals are more or less pointed; and for

the flower to be round and rich they should be broad and obtuse.

There is scarcely any thing more trying than to be obliged to reject seedling after seedling, which has been done times out of number at the Society for the Encouragement of Floriculture. When we consider with what anxiety a man sows and watches his seedlings up to blooming, and then how aggravating it is to have things just upon the verge of useful, but no better, it requires some firmness to extinguish his hopes; but the man who cannot do this to the best man in the world should not be a judge; and to the election of persons who can do this the Society owes the confidence reposed in its decisions. Flower after flower which has been rejected by such judgment, has been taken to other Societies, and received first-class certificates; many of them bought, grown, and thrown away, while the very few to which certificates have been granted by the Society are retained to the present day among the best in cultivation. Although the Society has not been long enough in existence to claim many flowers as their pets, the judges elected by the body can claim to have given the proper character to many that have sustained their places for years, although at the time their fiat has been disputed. The *Princess Radzville Dahlia* is among the best twelve now; *Scarlet Gem*, *Yellow Standard*, *Standard of Perfection*, *Marchioness Cornwallis*, *Queen of the East*, *Duke of Wellington*, and other favourites, obtained their first distinctions through the awards of those new judges at the Society elected upon the strength of their former accuracy; and no Society will be really useful until it elects censors from the floral world without any qualification but their own judgment, and that by the votes of the whole members. The country members by proxy, not handed over in blank to persons on the spot to be used for whom they like, but written in full, for such as each separate member deems to be most competent. But we are wandering from the point a little. The *Cineraria* is to be obtained without the notch, but it can only be done by seeding from a very few of the very best, retaining from among the produce those which approach the standard nearest. Those who grow a collection may raise many thousands without obtaining one in advance, while others, who save from the only half-dozen they grow, and these good ones, may, perchance, get one in twenty; and this applies not only to *Cinerarias* but to every flower that is raised from seed. On this account purchased seed is useless. A flower in advance of all the rest is worth five, ten, twenty, or fifty pounds, as the case may be. What florist will sell seed likely to produce such? It is not in human nature to sell chances of this kind. We have tried, quite against our own opinion, seed warranted by A. B. or C. of *Primula Sinensis*, *Calceolaria*, *Polyanthus*, *Mimulus*, *Pink*, and many other subjects, and never procured a move in advance; and our advice is now to save your own, but save from the best only, and where none but the few you select for the purpose grow. We confess that when we have had seed given to us as a great favour we have been no forwarder. The great cause why nurserymen and large growers rarely raise good new flowers is their being obliged to grow general collections for sale, and, consequently, having great difficulty in saving seed that has not been contaminated by the coarser varieties; while amateurs will often, from a single pod of good seed, obtain a decided advance, and the nurseryman becomes a purchaser.

The *Horticultural Society's Show at Chiswick*, on the 7th, was remarkable for one of those great collections which now and then come down upon us, as a surprise, from Exeter. Messrs. Veitch and Son, who have, doubtless, been quietly acquiring them for years, produced the most superb assemblage of Pitcher Plants, *Nepenthes* and *Sarracenia*, in the world, comprising a vast number of varieties, of the most extraordinary forms, sizes, and colours.

Description, however elaborate, could not do justice to them; but as they were the chief objects at the show, so have they been the chief object of conversation since. Messrs. Veitch had a gold medal awarded for them.

This has, perhaps, been the most trying season we have had for years for all *bedded-out plants*. The frost, sun, and wind have in turn done their worst; and in many good establishments the flower-gardens look poor and miserable, many plants having been all but destroyed, and the remainder being scarcely good enough to depend on for the summer.

In one place, where a very pretty geometrical flower-garden of twenty-four beds was planted, with the bedding-plants advertised at a shilling a dozen, three-fourths have gone off altogether.

Erysimum Peroffskianum, carelessly allowed to seed in a flower-garden, has come up like a weed all over the ground, and can hardly be got rid of by ordinary hoeing.

We only mention the fact, because the plants, whenever there were any left, have been in bloom some time, and are so vigorous as to appear another variety. The height two feet, and it blooms as large as a wallflower. This will suggest autumn sowing.

The *Plants in the Conservatory at Chiswick* are now getting too large for their domicile. A systematic pruning, to keep them within bounds, has been avoided until we fear it is too late to render them subservient and preserve a good form; but the sooner they are reduced the better.

Of course we do not allude to the Coniferæ, which are unmanageable, but the others, such as Acacias, Rhododendrons, Brugmansias, and many others could have been kept by pruning within reasonable bounds, and preserved in noble form; the longer they are neglected the worse they will be.

Waterer's American Ground at Chiswick is just now very attractive, although by no means in full bloom; some of the most noble specimens are not even showing colour.

It is very tastefully laid out. The worst part of the affair is the covering, which is not in keeping with the superb plants beneath it.

The inhabitants of *Cheltenham* had a chance of establishing one of the finest shows in England, having the advantage of a heavy subscription.

But they farmed the exhibition out to private speculators, who turned out one of the worst schedules that was ever printed, promised the most ridiculous prizes, cut them down after they were fairly won, and were actually threatened with law proceedings before even some of these were paid. It may be improved, but it will never be what it might have been with good management.

Our note upon the *Vauxhall Garden Shows* should have been read seventy-five, instead of twenty-five, pounds for prizes.

It was an error which occurred through the indistinctness of the copy. To tell against the first show on the 18th, there is a *Grand Bazaar and Fancy Fair at the Royal Hospital, Chelsea*, where the six bands of the household troops will perform together, forming the most extensive strictly military band that has ever been engaged. The profits of the fête are to be devoted to the hospital funds.

The *Surrey Zoological Gardens* form a very interesting arboretum. There are many noble specimens, with their names attached; the only thing to be regretted is that some of them are too close.

Considering that there are sometimes twenty thousand persons scrambling about there, the condition of the gardens is highly creditable to Mr. Patterson, the gardener. The Panorama is painted so that the foliage of the trees forms actually part of the scene.

At nearly all the *Dahlia Shows* this year there will be a class for the best new flowers of 1851.

It is curious to see how differently florists and amateurs prepare for the competition, some having thirty or forty new flowers, one of a sort; others fix upon the half-dozen which ought to win, and have two or three of a sort. These are extremes; it is unsafe to trust to less than nine varieties to cut six blooms, a dozen is better; for Dahlias, like many others flowers, have their seasons, and you may in vain try for a bloom when they are out of condition. E. Y.

NEW PLANTS.

THEIR PORTRAITS AND BIOGRAPHIES.

SMOOTH-LEAVED CENTROSOLEN (*Centrosolenia glabra*). —*Botanical Magazine*, t. 4552.—This genus is a new addition to the order of Gesnerworts (Gesneraceæ), and is closely allied to Gesnera itself, on which the order is founded. It was named by Mr. Benthams, from *Kentron*, a spur, and *solen*, a tube, in allusion to the bottom of the tubular flowers ending in a spur-like process. The true Gesnerworts form but a section of



the order. All natives of the American tropics, where many of them lead a half parasitical mode of life, attaching themselves to the stems and branches of trees, and feeding on the accumulations of dead vegetable matter which collects on the rough bark, or in the arm-pits of lateral branches, whence arises their preference for leaf-mould, peat, and good drainage, when under cultivation.

The subject of our present biography was introduced from La Guayra into the Royal Botanic Garden at Kew, a few years back, from Mr. Wagener, a German collector, who has been travelling in South America for some years. It will be sought after for furnishing late autumnal flowers for the sitting-room or conservatory, after a season's growth under the influences of stove-heat, partial shade, free ventilation, and a moist atmosphere. We believe, however, that this, and many other Gesnerworts, so much alike in their outward appearance, and not very striking in their beauty, would never have been retained in select collections were it not for the late period of the season in which they produce their flowers, the little room they take up in winter, and the ease with which they may be increased by seeds or cuttings. When the system of growing plants in close glass-cases, in towns, on Mr. Ward's plan, comes to be understood and acted on, this order of Gesnerworts will supply subjects well worthy of the attention of the amateur, for many of them seem, from their "quasi-parasitical life," to be peculiarly fitted to that way of management.

C. glabra belongs to the 14-*Didymamia* 2-*Angiospermia* class and order of the Linnæan system. It is a stove plant, erect, and about a foot high; *stem*, round, succulent, and reddish-brown; *leaves*, in pairs, yet very unequal in size,—one being small and spear-head-shaped, and the other large, egg-shaped, and saw-edged,—succulent, and smooth; *flowers*, on short, hairy stalks, rather crowded in between the leaves and the stem; *calyx*, five-lobed, tipped with purple, rather hairy, four lobes equal-sized, but the fifth much smaller, and bent back by the spur of the *corolla*; this is tubular, enlarged upwards, and five-lobed at the mouth, pale yellowish-white. Cuttings root readily without the aid of a bell-glass. B. J.

THE FRUIT-GARDEN.

CAUSES OF THE PREVALENCE OF INSECTS.—It is very common for folks to blame the east wind for a blight, &c., or to term a tree infested with the lilliputian enemies, "strucken," as the good country people here, in Cheshire, do. All these terms might be fairly merged into one, to save farther trouble, and that "the *inevitable*."

It is a custom to apply the term *strucken* to animals, in these parts; for when a very virulent inflammation (which probably had been smouldering some days in the viscera of the animal), at last bursts forth into a manifest blaze, apparently beyond the help of man; this the holders of the precise opinions of many generations term "strucken." In such a case, as we take it, the house has been on fire many hours before the engines arrived, and, as the Irishman observed, "were just in time to be too late." Let no one, therefore, in an impatient mood, give up these things, like the Turkish fatalist. Our gracious Creator has placed few *mere material* matters entirely beyond the reach of man, and to come to the gist of this question, we would respectfully suggest, that in three-fourths of insect invasions, as bearing on the culture of fruit-trees, whether in-doors or out—the cause—the remote cause, it may be—must be sought for in the conditions of *root culture*. Extreme drought, stagnation of corrupted moisture, and leathery kind of adhesiveness in the soil, are amongst the principal of the evils to which we would now direct attention.

DROUGHT may occur through shallow soils, through soils being too light or sandy, or from too much of porous materials being combined in their texture. Now, it is almost needless to observe, that drought at the roots of a plant or tree must act in a way somewhat analogous to partial starvation in the animal system. Vital energy, is, doubtless, much reduced; the absorption by the roots is much less active and copious; and by a parity of reasoning, the elaborated secretions must be thicker, sweeter, and more viscid, consequently, sluggish. It is manifest, then, that it is something more than the mere *ascending* sap that insects in general seek from fruit-trees, as witness the position in which they are for the most part found—viz., the *back* of the leaf. Hence, then, it becomes plain, that since the insect tribes most infect under a torpidity of the vital action, the cause must be sought mainly in the root; and this brings us up to the question of mechanical texture in the soil, of which more in due time.

STAGNATION OF CORRUPTED MOISTURE may arise from at least three causes. The soil in which a tree is planted, be it ever so fine in its own nature, may be recumbent on a bed of clay; or, what is much worse, on a "moss-pot;" or it may itself be of too adhesive a character; and, moreover, may have been originally handled when in a wet state, and this will spoil the texture of even a fine soil. Many persons, in making stations, or borders, for trees, prosecute the work with such an eager impetuosity, that the very point of all others on which a permanence of success should be based is lost

sight of in the turmoil. Good soil is procured, drainage secured, &c., &c., and so far so good; when, forsooth, a wet period supervenes, and instead of the work standing over until the new compost had emptied itself again, it *must* be filled in, and the work completed. Now this done, the surface finished, and all dressed off stylishly *above*, how many would feel annoyed at some old practical telling them their labour would never prove thoroughly satisfactory! "Oh, these fussy gardeners!" might be the secret ejaculation of the instant; "who ever can understand them?" But gardening is not learnt in a day, a week, or a year; and, however valuable science may be, this is an art in which experience carries as much weight as in any one that can be named.

To return: STAGNATION FROM A BED OF CLAY, as the substratum, generally happens when the surface of that clay or marl is on a dead level. In such case, the surplus water cannot drain off fast enough; and the tree being glutted, a torpidity in the fibres takes place, and it may be rot.

The other case—STAGNATION FROM A BED OF MOSS, or, what are practically termed, moss-pots, is still more prejudicial; inasmuch as the moss is more absorbent and retentive in its own nature. It is scarcely requisite to add, that no appliance can be expected to prove thoroughly curative in the latter case. "The midden must be removed in order to get rid of the Mushrooms."

It will now seem strange to some persons to observe, that all those cases meet nearly in a point as to the question with which we set out, viz., the influence of the soil below, as bearing on the insect tribes above. Torpidity of root-action in the wet soils, and a state of leanness, or partial starvation, in the hot and dry ones, for a time paralysed the absorbent powers, and a less watery condition of sap in the system of the tree is the sure result. To digress for a moment; we would here beg our readers not to confound the influence of gross manurial matter with the absorption of ordinary fluids through the agency of the roots. It is not an uncommon thing to find writers asserting that their peach or other fruit-trees were too gross, through being placed in too wet a soil, or having roots too deep. It is not, however, excess of mere moisture which produces luxuriance, but artificial manurial matters in the soil, at depths never liable to become anyways dry, which throws fruit-trees into what may be aptly termed a gouty condition. We will quote a case or two in point. The *Thunbergia* family, especially *alata* and its varieties, if ever so free from insects, whilst growing freely and in a young state, invariably become attacked, when older, by the red spider, if they are pot-bound, and now and then suffer for want of water. The same, indeed, may be said of *Cinerarias*, *Verbenas*, and a host of in-door things, which lay more within the province of the able writer of the *Greenhouse and Window Gardening*, and who, doubtless, can speak to endless cases of the kind. In fact, the cleanliness in exhibition matters of these days, as well as by consequence, the healthful luxuriance, manifest in all "show" matters, is, in the main, attributable to the fact, that torpidity of root-action finds no place in the vocabulary of those persevering gentlemen, unless it be the annual rest or cessation of action in both root and branch which some plants require.

In the Kitchen, or Fruit-garden, too, numberless are the cases where the same thing is manifest. An apple-tree is transplanted of some size, and the top but slightly pruned; ten to one this tree is the prey of the aphides, the scale, or the red spider, during the succeeding summer, unless special means are taken to prevent it; and the Plum, the Black Currant, &c., are overtaken with drought in a warm and loose soil, immediately they are smothered with aphides. We have written thus much to pave the way to a full appreciation of such means

which we will presently point to, but enough of cases: our business is to incite cultivators to increased observations whilst it is the season for such things; to learn to trace from cause to effect, or *vice versa*, as the case may be; and this once habitual, no trouble will appear too great to the ardent cultivator to secure thriving and creditable crops. Talk of trouble, indeed; the old proverb may apply here—"lazy folks take most pains." And, indeed, when we see a man driven to take up his trees and replant them, with sundry other matters twice or thrice done, one is tempted to apply this proverb. However, the fault is, that more err through ignorance than sheer idleness.

In thus handling the affair, it was our purpose to show the immense benefits to be derived from summer-mulching, and a liberal and timely application of liquid-manure in urgent cases. Such may be made to benefit most fruit-trees in their hour of need. To clean the shoots of the trees with tobacco, &c., although of much use for awhile, is but a temporizing expedient, and cannot alone prove satisfactory in the end.

Those of the readers of THE COTTAGE GARDENER, therefore, who suspect their trees are languishing through the causes here described, will do well to apply six inches of good rotten manure, immediately following with a thorough soaking of water, if the ground be dry. Where unusually heavy crops of fruit exist, such is especially beneficial, and the watering should be repeated at intervals, even adding liquid-manures, soap-suds, and soot-water if at hand. In addition, let us advise that the leaves of the trees be kept clear of insects and free from impurities, and that all unnecessary breast-spray about the *lower parts* of fruit-trees be kept under by stopping; such, too often diverts the sap into useless channels, to the detriment of the true-bearing wood.

R. ERRINGTON.

THE FLOWER-GARDEN.

ANNUALS.—From the middle of May to the turn of Midsummer, the flower-gardens planted after the good old fashion—that is, borders filled with herbaceous plants, and annuals in patches here and there—are, or should be, in their prime of beauty; Roses and Rose Bays, or Rhododendrons, come in in succession, and, after them, Hollyhocks, Dahlias, Michaelmas daisies, Golden rods, and Sunflowers carry on to the end of the autumn. Now-a-days, however, Midsummer is, perhaps, the less gay time of the whole season, under the system of massing plants of a kind together; yet it should not be put very far from it; although we do not choose to be bothered with beds of herbaceous plants, to save us the trouble and risk of removing them when out of flower to make room for a fresh lot just coming up to the mark, still, we have abundance of substitutes in gay-coloured annuals, of which it may be truly said, that nine-tenths of the gardening world do not even understand the use of, or their proper management if they did.

According to the prevailing style of planting flower-gardens, nine-tenths of the best annuals, that is, those which do not keep in bloom more than five or six weeks, should be used as auxiliaries among the newly-planted-out things, to keep up a gay appearance in the beds, while the summer plants are establishing themselves, thus avoiding the blank which would otherwise take place between the spring and summer flowers. At planting-out time every plant should be put in in some regular order, say in rows in any direction, then the spaces between these rows come in for the annuals, which may be transplanted there from the seed or nursery beds either before or at the same time with the summer flowers, so as to cover the whole surface of the

beds at once, and be in bloom as long as they last, or till the spreading of the more permanent plants renders it necessary to pull them up. Now, the kind of knowledge necessary to accomplish this varies exceedingly, and one man's practice will not avail much to his ten next neighbours in some instances. One man gets earlier cabbages, or peas, or something else, than his friend on the other side of the way, because the situation, or the soil, of his garden is different. It is the same with annuals; to be told that a certain annual, which I sowed on the twelfth of August or September, was in bloom on the tenth or twentieth of May, would just be as likely to lead another person wrong as not; his plants, treated the same way, might be in bloom by the middle of April, and be going to seed by the time he wanted to transplant them into his May arrangement. It is only by noting down the dates of sowing, transplanting, and time of coming into and going out of bloom, for several seasons, that an average can be struck for a given locality, and that is the reason why our books are not filled with such details as would lead a stranger into the secret of turning annuals to their true purpose in the flower-garden.

The best example of this style that I can refer to, near London, is in the beautiful garden of the Duke of Devonshire, at Chiswick. This place is open to the public who visit the garden of the Horticultural Society at the July exhibition; and, in passing from one garden to another, we have to pass through a piece of, I believe, old kitchen-garden ground, and here the scene is made quite gay with the scarlet ten-week stock, which is so managed as to be in flower by the first week in July. The same head and the same hands could arrange and manage to have the same annual in bloom in any week or month in the whole summer, and so with almost all other annuals whatever. At best, annuals of six weeks' duration are mere temporary things, and the use of them for temporary purposes seems more natural; at any rate, much better than to do away with them altogether, or to substitute them for more lasting plants; and if that is not enough, I would rather plant all the spare places in flower-beds newly planted with daisies or spinach, than to see bare fallows in them for many weeks, as at present in many places.

NEMOPHILA MACULATA.—When I first saw a bed of this it was early in July, and I put it down as a dead failure; since then I have seen it in perfection, and I have seen an experiment with it and the blue one which made the most charming bed I ever saw. It was tried in different ways, but the best was from plants that were removed at the end of February from the seed-bed; they were planted in rows nine inches apart each way; the soil was light, but as rich as richness could make it. Two plants of Maculata and one of Insignis, or the spotted and blue: thus one-third of the bed was of the blue sort, and two-thirds of the light with purple spots; the flowers or colours were as regularly disposed all over the bed as if they were set by hand; a bed with equal numbers of the two was gay, of course, but appeared as nothing to the striking effect of the former mixture. A less number of the blue does not answer at all. I hope every one who delights in the simple combinations that can be produced by very simple flowers will try a bed of these two pretty annuals next spring; the seeds of both may be sown any day in August. Those that I saw were from self-sown seeds last July; but if we had had a hard winter they must have perished, as they were strong plants by the end of October.

BEDDING GERANIUMS.—This season I have seven new varieties of the perpetual-flowerers under experiment, in order to determine their fitness to make gay beds; none of them have yet been named, nor will they, unless they are fully as good as the best of the old ones, and, of course, of a distinct colour. No one can prove a gera-

nium to be, or not to be, a good bedder, by growing it in a pot; therefore, I would recommend all newly-bought fancy sorts or seedlings raised at home for the purpose of bedding, to be planted out on a border by themselves, and not to be treated very kindly, as, if they do not fulfil our expectation under ordinary management, they are hardly worth their keep. This class never improves in any one point from the first show of flowers, and some of them will go back the second season, which is rather singular, seeing that many varieties of the scarlet breeds will improve the second, and even the third season. I cannot tell how it is, but all geraniums with a dark or brown colour on a white ground, as *Lady Flora Hastings*, for instance, never make a striking effect in a bed; and the more the white and dark are equally divided in the same flower, the less they are admired by good critics. A small dark spot on the two upper petals of a really white flower is not altogether condemned, and a bed of such flowers helps one at times as a "light bed," but a bed of white geraniums is still in expectation only. I saw a seedling lately with a good breeder, which has given me a new idea of bedders. The three front petals were as white as snow, and the two back ones a fair average scarlet all over,—that kind of scarlet first brought on the stage in *Ibrahim Pacha*. My friend is apprehensive that this scarlet will not stand the sun well, supposing his seedling turn out a good bedder in other respects; but there will be no want of such seedlings, and it is a great step gained to get rid of the dull brown or black spots, and also the *muddling* of the colours together, as in the Pacha. Of all the mixed colours yet exhibited in the whole race of geraniums, none are so good for bedders as clear white and brilliant scarlet in the same flower, provided the white petals are white all over, and the scarlet ones nothing but scarlet. A white frill all round the edges of the scarlet petals gives a degree of poverty at once, and unless we keep the sun from such a flower, there will be a lilac band or shade between the scarlet and the white before the flower fades. Nevertheless, let me not be a dictator; any one who differs from me in my estimate of bedding geraniums, I shall be glad to hear his reasons. There is such an increasing interest on this subject that people actually send samples of the leaves of seedlings across the country for judgment, long before the plants are of a flowering age; hence, the reason why I have so often recommended my readers to try their hands at getting seedlings in my own department, and now that we have got Mr. Glenney into the traces, those who had the good fortune to be born under the florists' planet, will get all the geometry of *their* flowers and seedlings explained to them, not only by the best judge of such things, but by the Lord Chancellor of their own craft, as it were. But I find, on the very threshold, that censors, like flower-gardeners, must be censured at times, to keep them up to the mark; and here is an instance in point.

My worthy friend and fellow-labourer, Mr. Appleby recommends the best *Pansies* to my notice for flower beds. The ruling passion is so strong, I cannot resist the temptation. Pansies I must have; and I look to Mr. Glenney for a choice of new ones. I turn over to his letter, in the same number, page 151, and the second Pansey on his list is just the very thing I wanted—a good contrast—*Hunt's Cardinal Wiseman*. If I had a bed of the Cardinal Wiseman Pansey, I would call it a bed of *Heartsease*; and that would be a contrast, indeed, from the state in which all our hearts have been affected by the Cardinal, though not all in the same direction. But how on earth am I to know where to get this bed introduced from Mr. Glenney's account of it. He says "the colour is extremely rich;" and, I am quite sure, it must be so, else he would not say it; but I do not know what that rich colour is, more than I know whether the Cardi-

nal himself is rich or poor; and I might plant it by the side of another bed of exactly the same colour, and spoil my *contrast* after all. However, I have read the "Lives of the Chancellors," and some of them were liable to such slips; and if our Chancellor has a slip of the Cardinal to spare, he will, perhaps, send it to me, and write the name of the colour on the label. Meantime, Mr. Appleby will be doing us all great kindness if he will name the best six kinds of Pansies for six different beds. I only know the best yellow, or the best according to my fancy, *the Marchioness of Lothian*; and if it were not for a little black in the eye, (black eyes being always a bad sign), I would call it perfection itself for a fancy bed; the best white, best blue, and best purple, everybody would like to know.

D. BEATON.

THE ROSARY.

THIS is now becoming an exciting period. Fortunate are they who, in this dry weather, can have unrestrained access to the drainage from a good farm dunghill. This, at one time, was quite at the gardener's service; but bailiffs and farmers now know its value so well that it is as difficult to procure as to get a waggon-load of stable-manure. Amateurs, as recommended lately, must make the rich liquid for themselves. For strong growth that beats even the fly, troublesome as it is; and for producing fine, large, well-formed flowers, nothing equals a plentiful dose from the manure-water pail. Effectual at all times, we have found it *most* strikingly so after the flower buds appear; one such watering will do great good—we would repeat the dose half-a-dozen times if we had the chance. Digging in manure in winter and spring is all very well, and should not be neglected, but for startling and pleasing effect, solid manure bears no comparison, in the case of the rose, to the contents of the manure-water barrel. Amid the so-called improvements of the times, such as heating by hot water, many may yet be induced to sigh in vain over the good old hot-beds when they find flowers and vegetables sadly in want of what, coming from these exhausted beds, constituted their best nourishment.

Ever since poets sung about "worms in the bud," every rose amateur knows that now he must hunt over his favourites, to *squeeze* the crafty caterpillars, and give a quietus to the devastations of whole hosts of insects, green and grey. Furnished with enveloping calico, a puff from Brown's fumigator would quickly move them from their perch; for in all such little cases that instrument is as useful as the garden-pot with a live cinder at its base, and the tobacco and moss above, as described by us to be so effectual in larger operations, two years ago, and which, for such purpose, maugre some witty criticism, we still believe to be the *simplest, cheapest, and best* for all large structures.

As the dying, very questionable moralist, advised his son to get money by *all* means—honestly, of course, if he could, but to get it—we would find fault with no means of ridding us of the pests that mar the beauty of our rose-trees, though some of the schemes resorted to have appeared to us a great waste of time, expense, and labour. Here, for instance, is an amateur, dipping the points of his rose shoots in strong tobacco-liquor, destroying, by this means, it may be, the insects adhering, and hurting vegetation at the same time, insuring, in all probability, as stunted a rose as if he had left the flies to nibble and fill themselves as they liked. Now, there are differences of taste, and to some the taint of tobacco may be most welcome; but unpleasant though it be to crush insects, for they, as well as we, are marvellous in their formation and workings, we would sooner and easier, and with less compunction, draw our fingers along such infested shoots, and then wash the whole of their remains away

with a clear, somewhat strong, solution of soot and lime, forcibly applied with a garden-engine and syringe. Many so-called inventions are brought out for the benefit of gardeners and amateurs; let the fanciful ladies and gentlemen have the intricate and the beautiful; give me the plain and the simple. R. FISH.

GREENHOUSE AND WINDOW GARDENING.

CACTACEÆ FOR THE COTTAGE WINDOW AND SMALL GREENHOUSE.—Some time ago I directed attention to the *Epiphyllum truncatum* as one of our most beautiful winter-flowering conservatory plants. Nothing in the shape of a remonstrance came from our good friend Mr. Appleby; and, thus emboldened, we jump his spiked fence again, consoling him with the assurance that he may reciprocate the liberty of snatching a stray article from our grounds, provided we do not catch him there. The fact is, that these Cacti are frequently a cause of contention at our local horticultural exhibitions. Here is one man contending that a collection of greenhouse plants should be nonsuited, without the ceremony of a trial by judge or jury, because it contains Cacti, which, with very few exceptions, are all natives of Central and South America, and the adjacent warm islands, and which, therefore, when not shewn by themselves, ought to be arranged, along with other tropical compeers, among the stove collections. There is another gentleman battling as stoutly, that a collection of stove-plants containing Cacti ought at once to be disqualified, because such plants are grown successfully in our moderately-heated greenhouses, and even in our cottage windows. The facts relied on are correct on both sides. The conclusions arrived at, the opposite of each other. Nothing less than an editorial *we* could satisfy the belligerents, and failing that, and unable to get the knot untied satisfactorily, like wise men, they cut it asunder, by giving up their separate shows of *stove* and greenhouse plants, and placing them lovingly together under the title of *Miscellaneous*.

The genus Cactus was, some time ago, cut up into several genera, which may more truly be considered mere subdivisions of each other. So far as yet has been tried, they freely amalgamate or hybridise with each other, and thus a vast field of new varieties may be looked for. Popularly, the group may be divided into the *globe* Cacti, the *tall*, and the *trailing* Cacti. The first are again divided into *Echinocacti*, generally small, roundish, ribbed plants, with bunches of spines on the ribs, and the flowers appearing there near the crown or apex; the monstrous ones some time ago introduced to Kew as the *visnaga*, belong to this section. The *Melocacti* resemble the foregoing in being ribbed and spined, but they have a tuft of downy matter at the apex, greater or less, and from thence *exclusively* the flowers proceed. *Mamillaria* consists of an assemblage of little bundles or nipples, bearing spines at their extremities, and the flowers appearing between them. The smaller and hardier of either of these are well fitted for windows, where the proprietor would rather have what is *uncommon*, in preference to what is more usual, though more strikingly beautiful.

Leaving out of consideration, for the present, the jointed *Opuntias*, the two sub-divisions of *Cereus* and *Epiphyllum* present the greatest encouragement to the small greenhouse and window gardener. The former is very varied in its species; the shoots of some being round and cord-like, and others more cut up into angles, and all supplied with spiny bristles. The shoots of the *Epiphyllum* are always more or less broad and leaf-like. Properly speaking, however, the title is a misnomer, as

it means "upon the leaves," signifying that the flowers are so produced; while, in reality, if there be leaves at all, they must consist solely in the bract-like, scaly substances which surround the buds.

Now, beautiful, nay, almost surpassingly so, as these plants are in bloom, little comparatively is known of their management by our window gardeners, and, consequently, a plant well-bloomed is all the more an object of attraction. In the generality of seasons, however, we do not think there is anything to prevent their success, when once they clearly see through the mode of management. Taken altogether, perhaps, the *Cereus speciosissimus* is the most splendid of the group. It does not bloom so freely and easily as the *Epiphyllum truncatum*, or *Ackermanii*, or *Jenkinsonii*, or *Speciosa*, or even its near neighbour *Cereus fulgens*; but then the size of the flower, and the richness of the colouring, transcend all others, if we except, for the short time they last, the night-blooming kinds. A young lady, two years ago, had a nice plant of *speciosissimus*, and had nursed it carefully for six years, but had never been rewarded with a single bloom, all the little protuberances that appeared turning into shoots instead of flower-buds. Despairing of success, she *kindly* offered to exchange with us her fine plant for something that would yield her a certain amount of pleasure for the trouble bestowed. Thinking that the patience so praiseworthy bestowed should not be unrewarded, the principles of culture were shortly explained, and, last year, there was something approaching a jubilee of invitations to see the splendid blossoms. In another case, the object of interest was *Epiphyllum Jenkinsonii*. For its luxuriant barrenness it was threatened with the rubbish-heap; but, owing to a little knowledge of the nature of the plant, and a fair portion of patience and attention, it was lately seen in a tradesman's window a perfect little gem, and smothered with flowers. Now, what has happened in these two cases, may take place in the experience of each and every of our readers. It must be impressed upon their minds, however, that, to succeed, they must not treat a Cactus as they would do a Geranium or a Cineraria. They will be in no danger of doing this, if they recollect that the Cactus group, with few exceptions, is not found in the moist, shady valley, but exposed upon the crags, and sending its roots into the interstices of bare and barren rocks, under a tropical sun. Although thus exposed, without a drop of rain reaching them for many months, so extremely tenacious of life are these succulents, and so great their power of absorbing moisture from the atmosphere, that even when thus exposed, many will preserve a somewhat green and plump appearance, while others, whose powers of absorption are more feeble, will be attenuated, withered, and apparently in the last stage of existence. No sooner, however, does the rainy season come, than our mummy-like Cacti regain, by degrees, their pristine vigour, and putting out what was lately their latent flower-buds, bloom most profusely, receiving, at the same time, a sufficiency of stored-up nourishment to enable them to bear such another *roasting* season with impunity, nay, with absolute advantage, so far as *flowering* and *seeding* are concerned.

Now, keeping these facts in view, the main points of culture will be at once indicated. They may be resolved into the following:—*First*. Attention to drainage. There would be no stagnant water amid the chinks and debris of rocks. *Secondly*. The soil must be open and porous, and, for fine blooms, moderately rich. These things secured, the component parts are a mere matter of fancy and detail. I generally use three parts of sandy loam, and one part of each of the following:—Lime rubbish, charcoal, and old dried cow dung. *Thirdly*. The soil should not be too plentiful, and, consequently, the pots for the size of the specimens should not be large,

otherwise luxuriance may be easily promoted at the expense of flowering. This will further appear, if we consider that in our best summers we cannot command such an amount of clear and powerful sunlight as they receive in their native localities. Hard, firm, well-exposed, rather than spongy, luxuriant shoots, should be our object. *Fourthly*. The less their opportunity for giving the plants strong concentrated sunlight, the less should window-gardeners attempt the thick, succulent-stemmed kinds, such as *C. speciosissimus*, and the more should they patronise the thin, flat-stemmed kinds, such as *Epiphyllum Ackermanii*, *speciosum*, &c. *Fifthly*. The plants must have moisture about the stems and roots when starting into bloom, blooming, and making fresh growth; but after that, they must have a period of rest and dryness. Unfortunately, the winter period of rest with us has none of the bright sun which they enjoy at home before the rainy season comes. The advice so often given to bloom and grow Cacti in summer, and rest and keep them dry in winter, is, as a general rule, good; but the mere carrying it out would be productive of no favourable results, unless in the case of the very free-blooming kinds. Our window-gardening friends must not only keep water from their plants in winter, and keep the atmosphere about them dry too; but the starving and roasting system must begin before our sun has declined in power and brilliancy.

In order to make the matter more plain; suppose that a Cactus is blooming on the 2nd of June; it had been brought from its winter quarters, and exposed to more light, warmth and moisture communicated to stem and roots, in April and May. Whilst in bloom, shade it a little, if you wish to preserve it as long as possible; but, as soon as the flowers are gone, prune away any too old shoots, and keep your plants in the *hottest and lightest* place you can command in the window or greenhouse. Water as required, until towards the end of July, and then begin to lessen the quantity. Then, and if you are not well supplied with conveniences in doors, before then, set the plant full in the sun against a south fence of any kind; but if of a light colour, to reflect both heat and light, all the better. Continue decreasing the water until about the second week in September, and then finally stop, using means to prevent what comes from the heavens reaching it; but giving all the sun you can, removing it to the house before there is danger from frost; and if a fine, late autumn, placing it, for a time, in the driest and lightest part of the house. If, after this, you can let it remain in such a house, and kept dry all the winter, all well; but after being so firm from exposure to draught and sun-heat, it matters very little where it is kept, *provided* it is dry, and in a temperature not lower than 35° and 40°. A stable, a byre, a hay loft, a warm close shed, are all good in their way. Comparative darkness during the dark days of winter is of little importance, so long as these conditions are attended to. Other things being equal, the longer this rest or dormancy is maintained, the more freely will it flower and grow when it again receives moisture, heat, and light. Of course, darkness, or even great shade in a heat that would set it a growing, would be ruinous. Dormancy, in comparative darkness, must be maintained by a dry atmosphere, and a cool equal temperature. On these accounts the hay-loft is a better place than the stable. All plants should have changes effected gradually. Therefore, when proceeding to grow Cacti, the stems should be moistened, even before the roots are deluged. But a somewhat sudden change from cold to heat, &c., is often advisable in their case. Hence, in the case of those plants kept in a greenhouse during the winter, instead of allowing them to be gradually excited by the suns of March, a more regular blooming is often secured by removing them for a month to a cooler place, and then,

when introduced again, as the sun has gained more power, the flower-buds break more simultaneously, and there is a greater mass of bloom at the same time.

With the exception of *Cereus flagelliformis*, *Malle-sonii*, and others of a trailing habit, that look well hanging from a pot, or grafted several feet in height upon the *Speciosissimus* or *Tetragonus*, I have incidentally alluded to those most fitted for the window, and similar in habit. Several dealers possess interesting hybrids as varieties. For windows, the plants are best on their own roots. For greenhouses, the weaker growing kinds are best grafted. The mode of doing so, and propagating, has already been referred to. Manure-water may be given when the plant is growing, but the great thing afterwards is refraining from water altogether, it being a better sign, in the end of autumn, to see the plants brown and somewhat withered by the sun, than nice and green looking.

R. FISH.

HOTHOUSE DEPARTMENT.

VARIEGATED-LEAVED STOVE PLANTS—(Continued from page 151).

CYPRIPEDIUM BARBATUM (Bearded C.); Malacca.—Leaves green, clouded, and blotched with white. A pretty terrestrial orchid.

C. PURPURATUM (Purple C.); Nepaul.—Like the preceding in foliage.

C. VENUSTUM (Charming C.); Nepaul.—Leaves green, with purplish lines and stains.

Culture.—Increased by division. The soil they require is a mixture of loam and peat. These plants have, besides their beautiful foliage, handsome flowers, and will grow quite as well, if not better, in a common stove as in the orchid house, and for that reason we have placed them here.

DRACÆNA TERMINALIS VARIEGATA (Terminal variegated D.); E. Indies.—A stove shrub, with long, lance-shaped leaves, of a deep chocolate colour, beautifully shaded, and striped with red and crimson. To see the beauty of this foliage to the greatest advantage, it should be so placed that the eye may look at it, or through it, from the under side. Its colours are, in such a position, of a truly unique character. The flowers are small and white.

D. PURPUREA (Purple-leaved D.); East Indies.—The foliage of this species is of an uniform purple chocolate colour. In form much like the preceding species. The flowers are white and inconspicuous.

Culture.—To grow these fine-foliaged plants to the greatest perfection, a tan-bed, of moderate temperature to plunge the pots in, will be advantageous. Soil: loam, peat, and leaf-mould, in equal parts. Increase by cuttings of the roots, stem, and young tops.

By Roots.—Take an old plant, turn it out of the pot, and cut off some of the thickest roots. Cut these again into lengths, two or three inches long, preserving all the fibres belonging to each; place them round the edges of a five-inch pot, in the compost recommended above for the plants. Let the top of the roots be just level with the soil; plunge them in a hot-bed, and give a gentle watering. They will soon form buds, shoots, and new roots, and may then be potted off singly into small pots.

By Cuttings of the Stem.—If the stems have attained any length, and it is desirable to increase the number of plants, cut them down to within six inches of the soil. Cut the stem into short pieces, two inches long, and plant these pieces round the edges of the pots, and manage them like the cuttings of the roots. These make nice plants even more quickly than cuttings of the roots. The young top may also be put in as a cutting, but will require to be placed under a hand or bell-glass.

DIEFFENBACHIA MACULATA (Spotted-leaved D.); South

America. A robust-growing shrub, with large leaves, beautifully spotted and blotched with white. Allied to *Caladium*.

Culture.—Requires the constant heat of the stove. Soil: sandy loam and peat in equal parts. Drain the pots well, as this plant will not bear the least stagnant moisture round its roots. Increased by cuttings of the young tops placed under a large bell-glass in heat.

ELEODENDRON INDICUM (Indian E.); East Indies.—Leaves dark green, beautifully spotted. The rib of the leaf is red. The foliage is large and handsome, and the plant forms a handsome bush four or five feet high. Flowers inconspicuous. Requires the heat of the stove. Soil, peat and loam in equal parts. Increased by cuttings placed under a bell-glass in heat.

ERANTHEMUM LEUCONERVUM (White-nerved E.); New Grenada.—The foliage of this new plant is really beautiful, equal almost to an *Anæctochilus*, every vein being pure white, and the rest of the leaf a beautiful light green. It is of an exceeding dwarf habit, and the foliage spreads over the pot. The flowers are pure white, but small.

Culture.—It requires the constant heat of the stove. Soil, light fibrous loam and sandy peat, in equal parts. The pots must be well drained, as it is rather impatient of moisture. Increased by cuttings and seed. The cuttings must be put in sand, under a bell-glass, and plunged in a gentle heat. The seed should be sown as soon as it is ripe and sown in March. The cuttings must be potted off as soon as they have made roots; for if they remain too long in the cutting-pot the roots will perish. The seedlings should be potted off, when they have made their second leaf, singly, into the smallest sized pots, and repotted as they require it. On account of its snug growth and beautiful foliage, this plant is worthy of being in every collection.

HOYA CARNOSA PICTA (Painted thick-leaved H.)—A hybrid.

H. CARNOSA VARIEGATA (Variegated thick-leaved H.).—These two distinct variegated varieties of the old *H. carnosa* have been introduced lately from the Continent, and are very pleasing, with their beautifully-coloured leaves. The former has, in the centre of the leaf, a large blotch of creamy-white, whilst the edges of the leaf are of the usual colour. The latter, on the contrary, has the variegation on the edges of the leaf, while the centre is of the green colour. Both are beautiful and equally worth growing.

Culture.—The coolest part of the stove, with a full exposure to light, is the right position for them. Soil: loam and peat, with a free admixture of old lime-rubbish. This will assist in keeping up the distinct and vivid variegation. They may be increased by cuttings of the stem, by a leaf, with a bud at its base, or even by a leaf alone, without the bud. The first makes plants the quickest. Put the cutting in sand, and give no water till a callosity is formed at the bottom of each cutting, or leaf: then give a little to encourage the roots to push forth, and the shoots to start and grow; then pot them off into small pots, and continually keep them rather under-potted. In too large pots, or with too much heat and moisture, they are apt to lose their beautiful variegation.

T. APPLEBY.

(To be continued.)

FLORISTS' FLOWERS.

MR. GLENNY ON FLORISTS' FLOWERS.

At the *Society for the Encouragement of Floriculture*, Mr. Quelch produced the only novelties worth mentioning, a *Byblomen Tulip*, with deep, dark feather, and the ground as clear and pure as snow. The flower had fallen, but it was considered a very beautiful flower. It

was broken from Mr. Jeffrey's breeders, and, therefore, its origin cannot be traced, as he had breeders of everybody. A second flower from the same source was exhibited. The white, pure; shape, good; and the markings, that remarkable mousey-colour which distinguished some of Mr. Rutley's breeders. This was named *Dr. Sanders*, at the meeting; and although Mr. Quelch declined putting them up for certificates, considering he had only the single bulb of each, both his flowers were approved. It is just possible, however, that another year, these flowers may be recognised as old acquaintances, for Rutley's, as well as Clerk's, Lawrence's, and other breeders, are spread all over the country, and it is almost beyond possibility that anything new can come from them. Every grower should raise seedlings for himself.

The ten thousand *French Tulips*, which advertisements tell the world received gold medals, and other honours, years back, and are now exhibited in the ground of Mr. Adams, nurseryman, Kensington, form the most extensive lot of bad things that has been seen for years. But three clean flowers could be discovered in the whole ten thousand; there did not appear to be any duplicates of them, nor could the names be recognised. A bright Rose was called *Prince Albert*, and a deep Rose was named *Lord Wellington*, and a light Byblomen, *Mrs. Purtree*. One remarkable feature was the absence of Bizarres. Nothing but Roses and Byblomen were there, and, with the exceptions already mentioned, all bad and dirty at the base.

Mr. W. Wragg's Bizarres have the fault which prevails too much, the stripes of colour reach too far down. The base for a Tulip must be clear of all specks or stripes, to be really good. The petals are too flimsy, still they may be grown. The brightest is the best, both will be found alike in character.

The *London Floricultural Society* held their fortnightly meeting at Exeter Hall. The principal productions were *Fuchsias* and *Verbenas*, and some few *Pansies*. Among the varieties of *VERBENA* already in cultivation, there were *Reine Hortense*, *British Queen*, *Vestator*, *Wonder*, *King*, *Magnificent*, *Pauline*, *Grandis*, *Shylock*, *Laura*, *Voltigeur*, and *Defiance*; of these, *Vestator* may be mentioned as a remarkable brown-red, unlike anything before introduced, and a good bedding sort. *Shylock* may be noticed, also, as a brilliant light scarlet; new this year, though exhibited and approved last season. *British Queen* is a white, with purple centre; also a flower let out this season. *Shylock*, *King*, *Grandis*, and *Voltigeur*, were all of the same batch; let out by Mr. Smith, of Hornsey, at the same time. They were all in good condition, but not in such perfection as they will be later in the season. A new *Verbena*, called *Virginus*, a true purple, brighter far than *Mrs. Mills*, was exhibited, but not for a prize. It has a fine truss, large flowers slightly cupped, in which state the divisions of the petal are scarcely seen, and when the older flowers open flat, they show the divisions. This flower is an acquisition for colour, and quite equal to some of our best in form. This will be shown for a certificate in the season, and will no doubt obtain it. *Virginus* will rank amongst *Exquisite*, *Mrs. Mills*, *Shylock*, *Enchantress*, *St. Margaret*, and such like, and is new. *FUCHSIAS* comprised *Ne plus ultra*, long set down by us as the prettiest of the reds, *Dr. Gross*, *Dr. Johnson*, *Psyche*, *Orion*, *Venus Victrix*, *Elegantissima* (which reflexes as much as a *Martagen lily*), and *Alpha*. Among the new *PANSIES*, was a small, promising yellow, shown by Mr. Batten, of Clapton, but too small for anything. Prizes were announced for *Hollyhocks*, both in class showing, and for seedlings.

Another batch of *Calceolarias* has reached us, with nothing to recommend them but colours, and even these present us with nothing new. These are from the

neighbourhood of *York*. Many small packets have come to hand, but we are evidently going backwards with these flowers. It is of no use to sow the seed of collections; no good will be done until florists' will *obtain a few of the best only*, and discard all others, while they save their own seed. We have not received, amongst numerous packets, a single variety worth naming.

The *Seedling Flowers at the Chiswick Show*, on the 7th, did not present one in advance of our present varieties. There were, perhaps, a dozen fancy *Geraniums*, but none worth notice. *Calceolarias* were all very bad. A *Cactus*, like *Jenkinsonii* enlarged, was conspicuous, on account of its monstrous flowers, and was named *Mars*. The so-called *hybrid geranium*, which some writer said was a cross between a hollyhock and a pelargonium! was exhibited under the name of *Wilmore's Surprise*. It is a semi-double variety, of a lake colour, and appears a very likely thing to make a splendid bedding plant. It is like a geranium in every particular, and has no more appearances of a cross than any other we possess. It seems, too, an abundant bloomer. It was raised by Mr. Cole, gardener to Mr. Wilmore, near Birmingham. There is nothing in its form or texture to recommend it, but the colour is new. G. G.

FLORISTS' FLOWERS CULTURE.

CARNATIONS AND PICOTEEES.—These beautiful summer flowers will now be advancing rapidly towards blooming. If not already furnished with support for the flower-stems, no time should be lost in applying it. The best sticks are made of deal, sharpened at the lower, and gradually tapering to the upper end. They may be either round or square. We prefer the latter, for a reason hereafter to be mentioned. They should have a coat of lead-coloured paint first, and then one of green. Painted of this colour they assimilate better with the colour of the stems. Their length should be at least three feet, which will allow six inches to be thrust into the soil, and $2\frac{1}{2}$ feet out. This height is desirable, for though the flower-stems seldom rise so high, yet a support is required for each flower, formed with a piece of wire with a hooked end for the flower to rest on, and it will be found the end to be fastened into the stake should be a little above the flower, in order to place it in the best position to be seen. Tie the stem to each stalk with the same precaution as described last week for the *Pink*—that is, loosely, for if tied tightly to the support, there is the same liability to form knees, which will certainly cause the stem in time to snap off at the node where the tie is so tight. The green fly will be very likely now to attack these plants. The best remedy is a syringing or two of tobacco water, and the way to make it, is to steep the strongest tobacco in water. Three ounces to a gallon will be strong enough. Let it macerate in the water for a few days, squeezing the tobacco two or three times with the hand to bring out all the strength. Apply it with a fine-rosed syringe. If the insects congregate in the scales round the buds, dip these in the water, holding them in a few seconds to be certain the insects get a sufficient dose of it. This is best done some calm evening. In the morning syringe again, rather strongly, with pure water, to wash off the dead or half-killed insects. Repeat this again in a day or two, if they are not all killed the first time. To have these flowers in the highest perfection, and to enjoy their beauty for the longest possible time, it is best to place them under a shelter of canvass upon a platform, just high enough to bring the flowers near to the eye. The height of the platform should be from a foot to fifteen inches. If lower, the spectator would have to stoop to examine the flower, and if higher, he would only see the edges. The frame to support the canvass should be in the form of a

house—that is, with two upright sides, and a roof sloping two ways, with a long piece of square wood, and rafters five feet apart, let into it. These should reach down to two beams, supported by pillars, to form the sides. Two rollers, the length of the stage, should be provided to fasten the canvass to, with a wheel at the ends to hold the cord, by which the rollers are drawn up and let down. This shelter must be used to protect the blooms from rain and bright sunshine. If this mode is too expensive, or inconvenient, caps of either canvass or oiled paper may be used, and will answer the purpose tolerably well. These caps must be formed of a wire frame, covered with either paper or canvass, with a hole in the centre, to rest upon the top of the stakes. They should come low enough down the stake to protect the blooms effectually, without actually touching them. Though a tolerable substitute for a regular stage, they are by no means either so perfect, or so useful, for every time the flowers are examined they will have to be lifted off; a rather tedious operation where a large collection is cultivated. On the other hand, if the proper stage is erected, the flowers can be constantly seen without any trouble, and every necessary attention given to them instantly.

Water must, of course, be given regularly, in sufficient quantities to support the growth of the plants, and no more, for too much will be as injurious as too little. It is impossible to give precise directions on this point, so much depends upon the weather, and the robust or weak state of the plant; it may, however, be remarked, and laid down as a rule, never to give water till the surface of the soil is dry, and this more particularly must be attended to when the plants are weak or sickly.

Syringing may be practised with beneficial results, the chief of which is the cleansing the foliage from dust and dirt. The paths, also, it will be desirable to sprinkle occasionally with water, to lay the dust, and give off a cool moisture to the air; this may be done every day, and two or three times a day during dry, hot weather.

Stirring the soil. If the surface of the soil, from frequent waterings, or any other cause, becomes hard, or appears sour or mossy, it should be stirred well up with a very small fork, using due care not to injure or disturb the roots. If the soil has sunk much below the edge of the pots, a fresh coat after the forking will be useful, and will give a neat, cleanly appearance to the plants. No weeds should ever be allowed to push beyond the seed-leaf.

Thinning the buds.—Whenever the buds exceed three they should be reduced to that number, and on weak plants one will be sufficient. This thinning should be performed early, in order to throw the whole strength of the stem into the remainder. As the buds begin to swell, they must have a ring put round each, to prevent them bursting sideways or irregularly. See *Pink* culture in the last week's number. Directions on layering next week.

T. APPLEBY.

THE KITCHEN-GARDEN.

ASPARAGUS.—Finish cutting from those plants which have been cut from this year for the first time, and allow the sprew, or small shoots, to grow on the old beds. Keep a thoroughly open surface, never allowing a weed to be seen, watching for every available opportunity of applying slight dredgings of salt, and if a little Guano and charred-dust can be given alternately, so much the more will be added to the vigorous growth of the Asparagus. This is the sure mode of laying a good foundation for another year's produce; for a luxuriant summer's growth is insured by abundance of strong buds on the crowns. No one would think of applying salt, Guano, or liquid-manure, in hot, parching weather. Advantage should, at all times, be taken of applying

them either at the commencement of rain, that it may be immediately washed in and incorporated with the soil about the roots, when their immediate effect will be visible. If dry weather should prevail for a considerable time, and it is deemed necessary to give the Asparagus some assistance, take advantage of cloudy weather; and if applied at night so much the better. If the manures are sprinkled on the surface of the soil when dry, this should at once be well scarified, and then well soaked with water. In dry weather, particularly, we prefer applying Guano and other easily dissolving manures in a liquid state, and then to wash it in with abundance of water, in order that it should be well extended to the extreme points of the roots. Never apply water by dribblets or in a manner to surface-bind the soil, but give a good soaking, and have done with it for a time.

CAULIFLOWERS and CAPE BROCOLI should be sown again, and a succession of plants put out between Peas, or in partially shaded situations. If the cauliflower-root grub is troublesome, which often is the case for the next two months, particularly if hot, dry weather prevails, apply soot-water and soap-suds, incorporated together, pretty liberally. Besides destroying those pests it is a famous stimulant to the plants.

PEAS.—Make another sowing of some favourite variety of late Pea, after which some of the early kinds should be sown for autumn production. All strong-growing, tall, late, or summer Peas should be mulched over their roots, and if dry weather prevails, abundance of water should be applied. Summer showers have but little good effect; indeed, showery, foggy weather, when the Peas are dry at their roots, produces the mildew, whereas, if kept moist and cold at the bottom, they continue

to grow vigorously, blossom, and produce fine pods for a long time, and escape the mildew. We occasionally, also, apply good soakings of liquid manure. We always have our Peas at great distances from row to row, or, indeed, sow them as shelter and shade for the other various summer crops. One row of a good variety of Pea thus sown, so as to enjoy the light and air on all sides, mulched and assisted by abundance of water, will produce an immense quantity of fine pods, and continue to grow and bear a long time; besides a single row does not afford such harbour for troublesome birds, &c., as they do when in rows a few feet from each other.

SCARLET-RUNNER BEANS may be dwarfed by pinching off the ends of the shoots to any desired height, or they may be encouraged to grow to a greater height, to afford shade or shelter, by surface-mulching and the application of liquid-manure.

DWARF-KIDNEY BEANS, where vigorous growth is encouraged, should either have a piece of rope yarn run up on each side of every row, and fastened to stakes, or a few tops of pea sticks, or other kind of brushwood, placed to prevent the wind from injuring them.

ROUTINE.—Plant again, and sow a full crop of *Coleworts*; make a small sowing of *Turnips*, and apply plenty of water occasionally to growing crops, or they will be hard, strong, and sticky; sow a few *Rampions* on a shady, cold situation; sow a few *Horn Carrots*, to have young in succession; choose showery or cloudy weather for commencing planting out full crops of winter *Brocoli*, *Borecole*, *Brussels Sprouts*, and *Savoy*s. Such things may be planted between Peas, Beans, &c., which will, for a time, afford them partial shade.

JAMES BARNES.

MISCELLANEOUS INFORMATION.

PHLOXES.

THESE beautiful flowers, which every cottager and amateur may grow as well as the best gardener in the world, deserve such attention, because their culture is easy, and their flowers handsome, graceful, and of almost every shade. The plan I adopt, when cleaning our borders in the spring, is to have those old plants that have been in the border for years, thinned out to five single stems. These five we allow to grow unsupported till they are about to show their flowers, when we make a hoop of hazel, or willow, or snowberry, or wire, anything that will bend, and make a hoop of about a foot or fifteen inches diameter, and we put a bar across it. The strongest of the five stems we put in the centre of the ring, and the other four we tie round the ring, by which means the flower stems support the hoop, and the hoop keeps them in their respective places; for they are tied to the hoop with a good fresh piece of bast, not too much twisted, but well wetted before using. This arrangement is very neat, and not the least offensive to the eye; whilst we have seen a dozen, or perhaps more, stems all bound together to one stake, and instead of seeing one fine head of bloom, you looked on a confused mass; but the ring prevents this by keeping them in their places till the last. I have the hoops made of rods not much thicker than the stem of the Phlox. The portions of the Phloxes removed we put in as cuttings in pots, and they are rooted in about fourteen days. These we plant as single plants among our roses, and they come into bloom after the roses are over in August, September, or October. I have often seen the *Gladiolus* recommended for this purpose, and it does very well, but we like the Phloxes better. These we plant at about a yard apart each way. We select the late-flowering ones for this purpose; the dark and most choice sorts we place in the centre, as that is the greatest distance from the beholder; and those with the fine delicate colours, such as *Von Houtti*, *Eyebright*, *Bicolor*, and the like, of which the

beauty cannot be admired if much beyond a yard from the eye, we place at the side of the bed. But if we were to have scented ones, such as *Antagonist*, of beautiful large white form, and extraordinary perfume, we would place them near the edge also.

We have tried different soils,—peat, rotten turf, and leaf-mould; but we found that Phloxes grow as well in common garden soil, made rich with very decayed dung, and they will be much the better for a little liquid-manure. This makes the foliage darker green, and the flowers of brighter colour.

I should have said that when we make cuttings we have them from two to three inches long, cut close to a joint by a sharp knife, and plunged in any of the frames at work for cucumbers or melons. We struck a lot in a box in the following very simple way. I had no room in our frames, so I had a box about eighteen inches long by twelve inches wide, and about six inches deep; put an inch and a half of crocks over the bottom of the box, and spread a little moss on the top of the crocks. I then put about three inches of sand over the moss, and dibbled in the cuttings very firmly, and gave a little water. I then made a hole about two feet square in a heap of soil lying for other purposes, and filled it with about a barrow-load of dung, some leaves, and short grass, not exceeding three barrow-loads in all; I then placed the box on the top, and drew the mould over and up to the box, and put two long squares of glass on the top of the box, and the next day the material had begun to heat, which we fancied was rather strong the fourth day; but on trying the thermometer it was about 70°, which we were quite content with. Sixteen days after I began to think they might be rooted, and upon trying to draw one up I found it firm. I then put a trowel in, and raised two of them, which had roots about an inch long. I then took off the glass, and let them stand without a cover all day, throwing a mat over them at night. We never allow Phloxes

to remain more than one year in the Rosary, and prefer cuttings, as we never found old stools do so well as cuttings among the roses. We sometimes put in a *Salvia fulgens* amongst the roses—for that, also, looks gay in September—when we want something lively; for then our Rosary looks dull, as we have none of the late-flowering roses. D. D.

SEEDLING FLOWERS AT THE BOTANICAL SOCIETY, REGENT'S PARK.

WE have never seen such a display of new *Pelargoniums* as were at the Royal Botanical Society's Show, on the 11th; there must have been scores, if not hundreds. In the *fancy class*, which we do not judge by such rigid rules as the ordinary show flowers, there was an immense variety. The most remarkable were, *Ayres's Advancer*, a fine deep colour, good form, and plenty of substance, received a certificate, and deserved it; *Advancer* is a good name, for it is better than *Formosa*; his *Gipsy Queen*, pretty, spotty, and crumply, was not so good; it had some sort of distinction, called a third prize. *Ambrose's Superba*, a brownish-red, with rosy under petals, was very pretty, and, in the present state of fancy varieties, deserved a certificate which was awarded; his *Captivation*, which also had a certificate, did not deserve it; there was no compactness, it was, moreover, a dull colour; and *Triumphphant*, which received a prize for brilliant colour, was loose and crumply; however, the recommendation of the judges was especially for colour, which was scarlet-rose. In the show varieties, *Exhibitor*, which is a very noble flower, good trusses, plenty of substance, better than average form, and very striking, had no mark of distinction, perhaps from a fancied likeness to *Emily*, but it deserved a certificate much more than some which had one. *Ambassador*, a good, showy, useful variety, a little too much like some we have, was noticeable. *Hoyle's Van Tromp*, rich purple-lake, was very showy, though somewhat loosely shown. *Gannymede* was a good deal like many we possess. *Colonel of the Buffs* was very bright and striking. *Magnet*, already mentioned more than once, had what was called on the card a first prize. *Eliza*, a bright scarlet-pink, had a third prize, and *Herald* is pretty, but crumpled. The seedlings were altogether striking, and in one tent, which was crowded beyond measure; in fact, it was almost fighting work to get to the table. We will not guarantee that we saw all the awards.—G. GLENNY.

TO CORRESPONDENTS

LILY OF THE VALLEY (Boots).—We know a garden where no one can flower the lily of the valley well, and we also know places where it flowers in the greatest abundance without any care whatever; we, therefore, conclude that it is partial to particular soils. We have seen it growing naturally, by the acre, in a shady wood, the soil being mere sand, enriched by the fallen leaves: we have dug it out in that wood and found all the roots within three inches of the surface. We have also seen it flower abundantly on a south border, in a rich kitchen-garden soil. Where it refuses to succeed we would make a bed for it on the north side of a wall: dig out the natural soil, a foot deep, and drain the bottom; then fill up the bed with a compost of light sandy earth and rotten leaves, half of each; press it down gently when within two inches of the top; then lay the roots regularly all over this surface, and then cover them two inches deep, and give them a good watering with a rose-pot; and, after that, we would cover the whole with an inch of quite rotten leaves, and water them once a week the following summer. February, or early in March, is the best time to plant them, and the third season they are in full perfection, and will last for ten or a dozen years.

ARUM (*Calla Æthiopica*), CENOTHERA, AND GOLDEN CHAIN GERANIUM.—We find too many useful hints in the following not to print it without curtailment:—"Lady-bird begs to say her *Arums* have bloomed at last. Finding that she could never get the healthy ones to do so, she brought out of a dark corner some that she had thrust there in the beginning of winter, in despair at her non-success; they have never had one drop of water the whole time. About six weeks ago (middle of April) they were repotted, the yellow leaves picked off, and the plants placed on a warm shelf in the greenhouse, watered abundantly, and kept standing in pans of water. Their temporary retreat, and subsequent cold water cure, have brought them into most abundant bloom. The *Cenothera* mentioned by Mr. Beaton makes a capital bed, and, by constantly picking off the old flowers, blooms all the summer through. It is perfectly hardy, too, stays in the ground all the winter without protection, divides in the spring, and for one bed this year makes two the next. It grows so well in this heavy soil, that *Lady-bird* doubts it; succeeding with Mr. Beaton. *Lady-bird* wishes he would give her a receipt for growing Golden Chain well." In response to this wish—we understand that this gay geranium is fastidious about soil, but we can assure *Lady-bird* that where the proper soil can be obtained it will grow in it as freely as any other kind. We saw whole rows of it, amounting to many hundred plants, last autumn, at Shrubland Park, where, Mr. Beaton says, it grows like a weed; and he has often told, in these pages, that the same compost used for Epacris is the best for it in pots.

NEW SOUTH WALES SEEDS (W. L. B.).—The seeds you have received from New South Wales are an interesting lot, and contain amongst them some beautiful things. The plants from that country will not bear the frost of this, therefore it is useless to sow them in the open ground. They should be sown in peat and loam, in equal quantities, and well mixed with silver sand, and covered thinly. Place them in a greenhouse, and water regularly; then, when the seedlings are two inches high, transplant them, three or four together, into 3-inch pots; let them remain in them for a year, then pot them singly into small pots, and grow them on till they flower. They will reward you for the expense and trouble, for they are beautiful flowering shrubs. You are kind enough to offer us, or any of our contributors, a portion, for which liberality we thank you. If you please to do so, send the following sorts to Mr. Appleby, *Pine Apple Nursery, Edgeware Road, London*:—*Acacia graveolens*, the two *Bossica's*, *Eriostemon lanceolatus*, *Gompholobium latifolium* and *grandiflorum*, *Logania floribunda*, *Platylobium formosum*, *Pencelatia sprengelioides*, and *Styphelia Læta*. Should any of them grow, Mr. Appleby will be glad to send a plant or two of each.

LONG-FLOWERING PLANTS FOR A PIT (J. B. R.).—You have a pit, in which you keep, through winter, your stock of bedding-out plants; you ask how, or what kinds of plants you could keep on a shelf or two, to flower in winter and early spring. You omit to say how you keep out the frost, and what means you use for that purpose. Supposing you have the means to heat, and dry the air of the pit, you might then grow the following: *Acacia armata*; *Chinese Primroses*, sown directly, and potted off as soon as they come up; *Cinerarias*, a few; *Cytisus racemosus*; *Daphne Cneorum*; a dwarf *Camellia* or two; *Rhododendron Dauricum*; a few *China Roses*, especially the kind commonly called Fairy Roses; *Mesembryanthemum spectabile*; and *floribundum*. For flowering in winter, the *Christmas Rose* and *Tree Violets* would be useful; also, the bulbs you mention would answer well, if potted early, and placed out of doors, plunged in coal ashes, till they form roots, such, for instance, as *Hyacinths*, *Van Thol Tulips*, *Crocuses*, and *Snowdrops*. The plants you mention would not answer; *Crocea saligna* is too impatient of damp; *Cytisus filipes* is too rambling; *Genista fragrans* might do, but it has hoary leaves, which would subject it to the effects of damp in your pit.

IXIAS (A Lover of Flowers from Childhood).—Your plant is a good seedling variety of *Ixia flexuosa*, and better than the *flexuosa lilacina* of olden times. The leaves of some *Ixias* die along with the flowers, and some continue a month after flowering, and others die at different periods between these extremes.

FLOWER-BEDS (Ibid).—The mixtures named by your informant were perfectly good, if they pleased the owner, but not so as an example. A bank of *Heliotrope* round a dark crimson *Phlox Drummondii*, and that enclosing a mass of *Commelina caelestis*, even with clipped sweet *Verbena* among the *Phloxes*, we could not hold up for imitation. *Salvia patens*, "trained dwarf," will be well matched by the *Convolvulus minor*, "not pegged down," however, but trained along by means of small sticks placed among them, but out of sight. The *Yellow Alyssum* is the best flowering yellow plant we have in May till the *Eschscholtzia* comes out. Transplanted *Stocks*, or *China Asters*, are the only fit things to succeed *Carnations* that are to be kept for their layers. *Liquid Manure* made according to our receipt may be made clear by the common charcoal filter.

FLEAS INFESTING GRASS (Ibid).—Haymakers and others are sometimes terribly annoyed with very small insects in the grass; but they are not fleas. There is no cure for their bites that we know of; but we always find spirit of hartshorn the most successful application for allaying the irritation of all insect bites.

ASPARAGUS BEDS NOT PRODUCTIVE (B. B.).—There are five contingencies essential for obtaining an abundance of fine Asparagus. 1. Beds well drained. 2. Abundance of rich dung in the autumn. 3. Weekly sprinklings of salt during the whole period of growth. 4. Leaving off cutting by the middle of June. 5. Not cutting down the seed-stems until they are quite yellow. If you have attended to all these rules, and yet have unproductive beds, your case surpasses our skill.

BEES WORKING UPWARDS (Ibid).—Our correspondent says:—"On the 4th of May I put a glass (four inches in diameter) on a strong stock of bees; on the 11th they took to it; on the 20th a large piece of comb was built upwards in it; this I waited to see partly filled with honey before I introduced a super. On observing the glass to day (29th May) I found brood in a forward state. I felt at a loss how to proceed, as the early glass of honey I looked for was spoiled; I, however, determined to introduce a small super, 10 in. by 5 in. deep, putting the glass at the top; a number of bees have left it. Have I done wisely? or, how should I act in the event of a similar occurrence? Why does Mr. Payne recommend a super to be introduced before removing a glass?" In all probability, you neglected to put a piece of guide-comb into your glass before using it, or the bees would not have commenced working upwards, but have gone at once to the top of the glass, and worked downwards, in which case you would have had no brood, for the queen would not have passed up the glass; use guide-combs in future, and the bees will commence working above. If a super was not introduced the bees would, in all probability, swarm before finishing the glass. The fourth edition of Mr. Payne's *Bee Keeper's Guide* is published.

HUBER'S HIVE (W. W.).—You will see a drawing and full description of Huber's hive in *Huish's Treatise on Bees*, page 56, second edition, which description you had better abide by strictly, if you fancy a Huber's hive. With regard to your suggestion about increasing the size, and thus having "a large hive, as recommended by *A Country Curate*," the latter replies—"It has often struck me that a box might so be constructed as to expand or contract (if I may so say) according to the season, whether it be summer or winter. But there are difficulties in the known dislike of bees to any cranny or hole other than the entrance, so that any slides or dividers would soon become useless from the persevering efforts of the bees to glue it fast with propolis. To be of any use your correspondent's leaves (to increase Huber's hive) must be full of clean, empty, worker-comb, at the end of autumn; but it is difficult to say how these desiderata are to be secured, because there will be sure to be honey in them at the time of autumnal removal, or no comb. To get rid of this, either the bee-owner, or his bees, will be obliged to destroy much of the comb, and it should nearly all be got rid of before giving it

to the bees in spring. It strikes me that Mr. Munn's *Bar and Frame Hive* would be the most likely to meet his wishes. Much as I recommend large hives, for single-hiving early and strong swarms, it were well if we could contrive to contract the space in winter time; the thing might easily be contrived but for the propolis nuisance."

BEES NOT WORKING (*John Patterson*).—You will see the cause of this, and the remedy, at p. 134, of the present volume.

ROOTS ON VINE STEM (*J. F. Armstrong*).—Although we quite agree with you in condemning the practice of burying the dead carcasses of animals in a vine-border, yet we do not think this (done two years ago), is the cause of the vine leaves turning yellow, and roots issuing from the stem. Being, as you say, "a young gardener," you have, perhaps, allowed your vine to be forced too hard, and in too moist an air; the latter error, with, consequently, too little ventilation, will certainly produce stem roots.

INSECTS DESTROYING TURNIPS (*J. F. Armstrong*).—The insect, of which you say hundreds are observed in the act of scooping out the interior of young turnips, is one of the very numerous smaller species, of the family of Rove Beetles, *Staphylinidae* belonging to the genus *Quedius*, and being apparently *Q. mesolinus*. We have found a larva, which is, we believe, that of a species of the same genus, engaged in the same manner; but the general habit of the group is considered to be that of feeding upon other insects. Was not the damage in this case done by slugs, and were not these rove beetles feeding on them? We shall be glad if you will again examine the plants.

HEAVENLY, OR CELESTIAL TREE (*D. P.*).—We never heard that name applied to a tree. *Celestina* is a genus of sky-blue-flowered shrubs, and herbaceous perennials.

SANGSTERS FLORUMBRA (*Rev. J. S.*).—We have no doubt that this is very efficient, both as a shade, and as an aid to fumigate plants; but we cannot speak from our own experience. It is a registered invention, and any one making one will be liable to a penalty.

WHITE HELLEBORE POWDER (*T. Fallon*).—This may be applied to the caterpillars on cabbages, in the same way that it is applied to those on gooseberry trees, namely, by means of a cooks' flower-dredger. The powder must be washed off from the cabbages before they are boiled, for Hellebore is poisonous.

SLUGS IN A HOT-BED (*J. B.*).—Sprinkle lime over the surface of the soil, in the evening, when the slugs are moving about; or water the soil with lime water. If you refer to our indexes, you will find mentioned the soils proper for all the plants you mention.

FORCED MUSHROOMS (*James Brown*).—The physician you quote may have a strong opinion against all mushrooms, and think that, whether forced or produced naturally, "they are little better than toad-stools." If he means that forced mushrooms are poisonous, whilst those grown in pastures are wholesome, he is wrong. Your *Pansey* was too bruised and dry for us to discover its name.

WINTERING BEES IN BOXES (*A. W.*).—Boxes made of inch-thick deal would preserve bees through the winter without an outer case of wood, but they ought to be well protected from rain; it is dampness, either without, or combined with, extreme cold, which injures bees in winter.

THRIP ON CAMELLIAS (*G. B.*).—Treat this pest with "Laurel Tea," as we directed, as often as found on the plants; but do not report them until the usual time about the middle of July.

FUNGUS ON ROSE-SHOOTS (*Hortulanus*).—Brush them over with a thick paint made of clay and water, with a large handful of flowers of sulphur to each gallon.

LUCERNE (*Clericus*).—The failure seems to have been occasioned by the seed being old; at least, so we judge, from some not vegetating at all, and the seedlings from the remainder turning off yellow. Are there many wire-worms in your soil, which you say was "carefully cleared, and reckoned the best in the parish?"

CELERY NOT HEARTING (*Ibid*).—As your's was the largest, and only failed to obtain the first prize because it was deficient in heart, we can only suggest that it was not properly earthed up for blanching. We will consider about the *Index*.

POROTTO BEAN (*B. M.*).—We gave the same quotation at p. 184 of our last volume, and asked for information as to its true genus, &c., but obtained no reply from any of our readers.

DOUBLE DARK CRIMSON PRIMROSES.—*F. S. H.*, may have some of these, by paying for them, of Mr. A. Richards, 31, South Clerk-street, Edinburgh.

THREAD-LIKE WORMS (*F. W. S.*).—These twisting worms, which were found in your garden after rain, are specimens of the *Gordius aquaticus*. A drawing, and description of it, is given at p. 219, of our 4th volume.

PANSEY CULTURE (*W. W.*).—You will find a full essay on the subject, at p. 200 of our last volume.

TRUMPET LILY.—A correspondent (*W. D. Paine*), says, in answer to the query of *Eliza L.*, at p. 105, that he has often heard the Arum, or *Calla ethiopica*, called "the Trumpet Lily."

GARDENING WATERING ENGINE (*D. T. E.*).—The *Barrow Watering Engine*, which you will find drawn and described in the 23rd number of *The Cottage Gardeners' Dictionary*, is the best "to save labour" in watering a small flower-garden. They are expensive—about £5; but we cannot recommend makers. They must advertise. Much less can we recommend servants; a gardener who will do all you require in-doors, &c., is not easily found.

NAMES OF PLANTS (*J. S.*).—Your plant is a *Melaleuca*, and, we think, *M. lanceolata*. If you know any Fellow of the Horticultural Society who has a ticket of the July show to spare, you may obtain it for 3s. 6d.; but to buy one on the day of the exhibition will cost seven shillings. (*C. O.*)—Your greenhouse climber is *Kennedya nigricans*. (*T. P. L.*)—Your specimen is too small, but we think it is the Mugwort, *Artemisia vulgaris*. (*Frank*).—Yours is the Great Bistort, or *Snakeweed*, *Polygonum bistorta*. It is rather uncommon, though found in some place in most English counties.

FUCHSIA BUDS DROPPING (*T. P. L.* and *C. J. P.*).—The almost invariable cause of this is the root action, and the action of the sap vessels in the buds and their footstalks not being duly balanced. If the roots are kept warm and moist, and the buds shaded from mid-day sunshine, and in a moist air, the buds will not fall.

THE CATERPILLAR—GOOSEBERRY BUSHES.—A lady correspondent at Dunoon says—"It may not be generally known, that at this season of the year, when the caterpillar is making its appearance on the gooseberry bushes, a piece of whin (*Furze*) in full flower, placed in the middle of the bush, will effectually destroy them. This is the second year it has been tried by the writer with the same beneficial result."—*Greenock Advertiser*.

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Advertisements.

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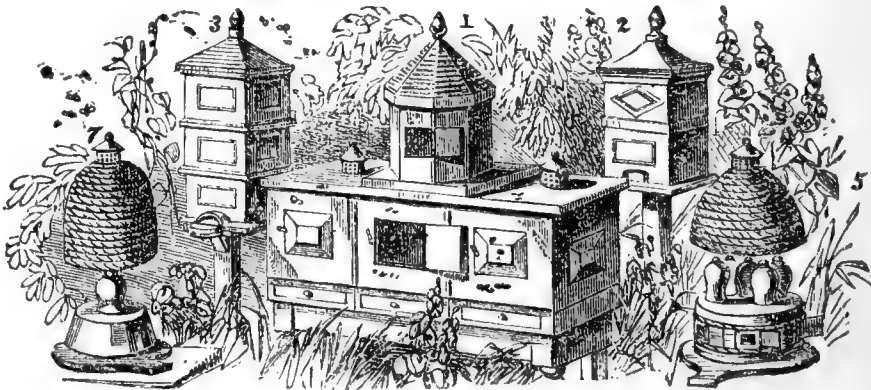
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BEE HIVES, as shown at the GREAT EXHIBITION of 1851, by GEO. NEIGHBOUR & SON, 127, High Holborn, London. No. 1. Nutt's Collateral Hive. 2. Improved Single Box-Hive. 3. Taylor's Amateur's Bar-Hive. 5. Neighbour's Improved Cottage Hive, working Three or Five Glasses. 7. The Ladies' Observatory Hive, &c., &c. A Priced Catalogue, with drawings and particulars, forwarded on receipt of Two Stamps.

Agents.—Liverpool: WM. DRURY, Castle-street. Manchester: HALL and WILSON, 60, King-street. Glasgow: AUSTIN and McASLIN, 168, Trongate.

WEEKLY CALENDAR.

M D	W D	JUNE 26—JULY 2, 1851.	WEATHER NEAR LONDON IN 1850.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bef. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in In.						
26	Th	Mushrooms seen.	29.980—29.919	75—51	W.	—	46 a. 3	19 a. 8	2 3	27	2 21	177
27	F	Broom Rape flowers.	29.969—29.943	87—47	S.W.	—	46	19	2 35	28	2 34	178
28	S	QUEEN VICTORIA'S CORONATION 1838.	30.076—29.992	76—48	N.W.	—	47	19	3 13	29	2 46	179
29	SUN	2 SUNDAY AFTER TR. ST. PETER.	30.079—29.919	73—55	S.	0.02	47	19	sets.		2 59	180
30	M	Hoary Beetle seen.	30.156—29.916	63—35	N.E.	—	48	18	9 a 26	1	3 11	181
1	Tu	Oxford Act. Camb. Com.	30.160—29.921	79—57	S.W.	—	48	18	10 a 8	2	3 23	182
2	W	Red Evebright flowers.	29.999—29.964	73—55	W.	—	49	18	10 41	3	3 34	183

THERE was a time, "long, long ago," when the students of our Inns of Court, before they were entrusted to defend the property, the life, or the reputation of their fellow-men, had to undergo some qualifying tutorship and discipline. In those days of common sense, "after dinner and supper," says a contemporary writer, "the students and learners in the house, sit together by three and three in company, and one of the three putteth forth some doubtful question in the law, to the other two of his company, and they reason and argue unto it in English, and, at last, he that putteth forth the question declareth his mind, also showing unto them the better opinion of his book; and this do the students observe every day throughout the year, except on festival days." Now, this discipline did not at all consort with the tastes of two classes of "the apprentices of the law;" those against whom the Benchers aimed the order "that there be no drinking of healths, nor any wine or tobacco uttered within the house;" and that equally large section who accept, literally, the Lord Chancellor's advice to read Don Quixote, as a preparation for the profession. Of this last class—those who indulge in any mental occupation rather than such as is applicable to the labours of Westminster Hall—was SIR HUGH PLATT; he was a lawyer without law, and, consequently, it is to be hoped, without practice. In the title page of more than one of his books, he is styled "of Lincoln's Inn, gentleman," and he probably resided in St. Martin's Lane, for there he tells us was his garden. Yet he was as unfixed in his residence, as he was volatile in his schemes and inventions, for at one time he had a country house near Copt Hall, in Essex; whilst in 1594, he lived at Bishop's Hall, in Middlesex, and had an estate near St. Albans. We can arrive at no nearer date as to the period of his death, than that he was alive in 1608, when some of his volumes issued from the press, and was dead when Mr. Charles Bellingham edited another, in 1653. This gentleman was probably Sir Hugh's son-in-law, for he speaks of him as "a great searcher after all sorts of knowledge—to whom I had so near alliance," and with some unction Sir Edward Coke considers it "a special blessing of Almighty God, that few or none of the profession die without will, and without child!" Be this as it may, and without stopping to consider whether if Coke himself was blessed with a child, the blessing extended to his management of his offspring, we may pass on to consider Sir Hugh Platt as an author, nor need this detain us long. Mr. Weston, in his Catalogue of Authors on rural affairs, considers Sir Hugh "the most ingenious husbandman of the age he lived in," which may be consonant with truth, but is a conclusion Mr. Weston could not have derived legitimately from Sir Hugh's publications. Those which relate to the culture of the soil are *Divers soils for manuring pasture and arable land*, published in 1594. *The Jewel House of art and nature*, in the same year; his *New found art of setting corn*, without a date; and *Flora's Paradise, beautified and adorned with sundry sorts of delicate fruits and flowers*, by H. P. knight, in 1608. He was then residing at Bethnall Green, for his preface is subscribed "Bednall Green, near London, this 2d of July, 1608. H. Platt, miles." It is probable that he did not long survive this publication, for he tells his readers that though "not knowing the length of my days, nay, assuredly knowing that they are drawing to their period," he resolved to make known at once the results of his experience. In this work, and in the others we have mentioned, although he gives some experiments of his own, yet they are chiefly relations of the experience of others. We restrict this criticism to his observations and directions for the cultivation of crops, in which the most important points which he urged on the grower's attention were dibbling in the seed, and improving the staple of lands by the admixture of soils. *The Garden of Eden*, of which the first part, a mere reprint of *Flora's Paradise*, appeared in 1653, and the second part in 1660, are only from the posthumous papers of Sir Hugh. Besides the above works, he also published in 1603, *A new, cheap, and delicate fire of Coal-balls*, and we find Evelyn saying, "I send you a short treatise concerning Metals of Sir Hugh Platt's." Ingenious in all he suggested, yet he complains, "I write to all, but scarcely one believes;"

and he therefore sought another audience in a pocket volume, entitled *Delights for Ladies to adorn their persons, tables, closets, and distillatories, with beauties, bouquets, perfumes, and waters*. This last of his works appeared in 1608, and is prefaced with this by no means unpoetical address.

"TO ALL TRUE LOVERS OF ARTE AND KNOWLEDGE.

Sometimes I write the formes of burning balles,
Supplying wants that were by woodfals wrought:
Sometimes of tubs defended so by arte,
As fire in vaine hath their destruction sought:
Sometimes I write of lasting beverage,
Great Neptune and his pilgrims to content;
Sometimes of food, sweet, fresh, and durable,
To maintaine life, when all things els were spent;
Sometimes I write of sundrie sorts of soile,
Which neither Ceres nor her hand-maides knew.
I write to all, but scarcely one beleeves,
Save Dive and Denshire, who have found them true.
When heavens did mourne in cloudie mantles clad,
And threatened famine to the sonnes of men:
When sobbing earth denied her kindly fruit
To painfull ploughman and his hinds; even then
I write relieving remedies of dearth,
That Arte might helpe where Nature made a faile:
But all in vaine, these new-borne babes of arte
In their untimely birth straitway do quaile.
Of these and such-like other new-found skils,
With painefull pen I whilome wrote at large,
Expecting still my countries good therein,
And not respecting labour, time or charge.
But now my pen and paper are perfum'd,
I scorne to write with coppres, or with gall;
Barbarian canes are now become my quils,
Rosewater is the inke I write withall.
Of sweetes the sweetest I will now commend,
To sweetest creatures that the earth doth beare:
These are the Saints to whome I sacrifice
Preserves and conserves both of plum and pearce.
Empaling, now adieu! tush, marchpane wals
Are strong enough, and best befits our age:
Let pearcing bullets turne to sugar bals,
The Spanish feare is husht, and all their rage.
Of marmalade and paste of Genua,
Of musked sugar I intend to write,
Of leach, of sucket and quidinia,
Affording to each lady her delight,
By fancie framde whitin a theorique braine.
My Muse presents unto your sacred eares.
To win your favours falsely I disdaine;
From painfull practise, from experience,
A sound, though costly mysterie, I derive:
With fire flames, in scorching Vulcan's forge,
To teach and fine each secret I do strive.
Accept them well, and let my wearied Muse
Repose her selfe in ladies laps awhile:
So, when she wakes, she happily may record
Her sweetest dreames in some more pleasing stile."

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-four years, the average highest and lowest temperatures of these days are 72.6°, and 50.8°, respectively. The greatest heat, 93°, occurred on the 27th, in 1826, and the lowest cold, 37°, on the 30th, in 1848. During the period 99 days were fine, and on 69 rain fell.

WE have now visited the Bazaar of all Nations in its various stages of development. We have seen it when the workmen of every country were busy in the arrangement of their national wares, and we caught many practical hints, such as no other gathering could offer, and to witness which, heretofore, the globe must have been circumnavigated; we have seen it when crowded with none but the aristocracy of Great Britain, and we marked how the useful was as much an object of curiosity as the merely gorgeous and ornamental; we have seen it when our Queen, on a shilling day, with few but her personal suite, was pursuing her careful in-

spection, and asking home questions of the exhibitors; and we have seen it when seventy-thousand of the working classes of England were thronged, harmless, joyous, and inquisitive, among its stores of the splendid and instructive. We have seen all this, and we rejoiced over the deep conviction—which every visit confirmed—that not one class alone; not one sect alone; not England alone; not France alone; not nations alone—but mankind together, are advancing in the best of paths—excellence in the domestic arts, and in peace and good-will to all their brethren.

Much do we rejoice over this grand re-union of the

nations; and, although but few of the objects they have brought as examples of their progress are within the purpose of our pages, yet those few shall receive our best attention, and we will point them out specially to our readers. We have not yet ingathered our materials, which we purpose to illustrate with drawings, as much as needed; but we will make, to-day, a faint beginning as a demonstration that we are quite alive to the consciousness of how much of utility, how many lessons of improvement may be extracted from this wondrous Museum.

At the western end, *outside* the glass walls of the Exhibition, we very particularly recommend to our reader's notice a model, shewing a *new system of glazing Greenhouses, Conservatories, &c.*, invented by *Alfred Kent, Plumber, &c., Chichester*. This system is founded upon a mode of fastening in the glass by means of a small bar of wood, lined with Indian rubber, pressed by a nut and screw against the frame beneath. "The chief points of novelty are,—1st. That by the peculiar construction of the lights, and the selection made in the materials to be used, putty and all other adhesive composts, are entirely avoided. 2nd. That the glass can be put in or removed with such facility, that the bars and frame can be painted, the glass cleaned, and the whole effectually repaired at an immense saving upon the old system. 3rd. That it will not require such frequent repairs as ordinary greenhouses. 4th. That in the event of a fracture, it will not be absolutely necessary to wait for the assistance of a glazier to repair the same; the simplicity of the contrivance enabling any one to become his own glazier; and 5th. That leakage, a universal complaint in the old system, is here guarded against, by a peculiar grooved bar, which likewise assists to carry off evaporation, and renders ventilation more complete."

Very numerous are the specimens of *Bee-hives*, both foreign and domestic, and we hope to find room for a notice of them all, for the subject of bee-culture now claims universal and deserved attention throughout the country. We will begin by examining the several descriptions of improved bee-hives, arranged by *Messrs. Neighbour and Son, High Holborn*, in the north gallery directly under the transept (class xxix.) The novelty in the construction of these hives, consists in the facilities which are afforded of taking therefrom, at any time of the gathering season, the purest honey, in larger or smaller quantities, without destroying or even injuring the bees; thus humanely superseding the barbarous system of murdering these interesting insects to obtain the produce of their industry.

Immediately adjoining this group of untenanted bee-hives may be observed *living hives*, with the bees most industriously at work. These useful little creatures have been highly honoured by the Executive Committee, for of all the animal workers that contribute to the interest of the Exhibition, they alone are allowed therein to display their matchless ingenuity and skill. By a simple contrivance, the bees are allowed egress and

ingress through the building, without in the least degree molesting visitors, thus enabling the admirers of the works of nature to see the process of forming the cells and storing the honey.

Within these few days Messrs. Neighbour have added to the working Apiary a bee-hive, constructed entirely of glass, protected by a cover neatly made of straw, but so contrived, that, on application to the attendant, it can be removed instantly to exhibit more particularly the curious workmanship of the tenants.

Her Majesty the Queen and Prince Albert were some time engaged in watching, with much interest, the busy scene before them, and put many questions relative to the habits and economy of the Honey-bee.

GARDENING GOSSIP.

The *American Ground at Chiswick* is inferior to that at the Regent's Park. One of these faults is in the very limited view we obtain from any given point. There is no lack of variety, we only quarrel with the effect, which is far better at the Park.

The Horticultural Society have judiciously arranged that any stranger shall obtain admission by tickets, to be had at the Society's rooms, at one shilling, without the trouble of obtaining an order from a Fellow. Thus, Mr. Waterer will have the full advantage that could be derived from a separate exhibition, for the price is the same, while there is all the additional attraction of the Society's garden.

The showing of *Hollyhocks* has become almost a general feature in miscellaneous exhibitions. How to show them to the best advantage is another affair, some require the top of the spike; but by far the best way is to limit the length of the spike to eighteen inches, and to take the top off. In short, to have the eighteen inches all flower.

At the *National Horticultural Society*, June 11th, E. Beck, Esq., was in the chair. Four new members were elected, and eight gentlemen proposed to be elected at the next meeting.

The following *first class certificates* were awarded. To Mr. Hoyle, of Reading, for a *Pelargonium* named *Elize*, the general character of which is light. Upper petals rich crimson, edged with rose; lower petal pink, with a white eye; first-rate form, a good trusser, and good substance. To Mr. Hoyle, for a *Pelargonium* named *Ganymede*. Upper petals dark, blotch edged with rose; lower petals pale rose edged with pink; good form and substance, with good trusses.

Certificates were awarded to Mr. Hoyle for his *Pelargonium* named *Magnet*, a splendid high-coloured flower, a good trusser, and of great substance. The edges, however, were a little crumpled; still it is a desirable variety.

Also to E. Foster, Esq., for a *Pelargonium* named *Purple Standard*. Upper petals rich purple edged with rose, lower petals dark rose edged with pink; and for a *Pelargonium* named *Enchantress*, a light flower of good properties; also for *Ariadne*, dark upper petals edged with rose, lower petals rose edged with white. This, the censors remarked, will improve when better grown.

To Mr. Beck, of Isleworth, for a *Pelargonium* named *Arethusa*, an improvement upon Beck's *Major domo*.

FANCY PELARGONIUMS.—*First class certificate* to Mr. Ayres, of Blackheath, for *Caliban*, a flower of good form. Upper petals dark edged with pale pink, the lower petals had a distinct dark ring surrounded by a broad edging of cream colour; a decided improvement upon its class. Also for *Miranda*, for its pleasing colour and firm markings. Also for *Advancer*, a pleasing variety, of good form and substance. Also for *Gipsy Queen*, a dark variety, of good

form, a white ground, and beautifully spotted with dark crimson.

Commendations to Mr. E. G. Henderson for *Beauty of St. John's Wood*, commended for its colour. Also for *Queen of the Fancies*, commended for fine colour and good form. Also to the same for a new *Shrubby Calceolaria* named *Wellington Hero*, a bright clear yellow, suitable for bedding purposes.

Mr. Willison, of Whitby, sent some fine high-coloured *Potentillas* named respectively *Alpha* and *Empress*. The censors desired them to be sent again.

Mr. Kimberly, of Coventry, had some *Pansies* of merit named *Zenobia* and *Pluto*, but they were so much injured by travelling, that the censors could not adjudicate upon them.

Mr. Schofield, of Knasthorpe, near Leeds, Yorkshire, sent some cut flowers of *Calceolarias*, but the censors required the plants as well, in order to discuss upon their merit.

Mr. Chater, of Saffron Walden, sent some promising seedling *Pansies*, namely *Rotunda*, light buff, with rose spot; *Sparkler*, the colour of which is choice and dark; *Aurantia*, a pleasing variety, and of the brightest yellow; *China*, white ground, dark edges, a pleasing flower; and *Beauty*, a white ground, with the edges of a pleasing dark colour.

Messrs. Henderson, of Pine Apple Place, sent a beautiful new *Heath* named *Erica grande*. The flowers are arranged in a circle round the stem; they are long, and of a bright orange scarlet corolla. The censors wish to see this again.

Cucumbers should be grown from cuttings when once we obtain a first-rate kind, for, strictly speaking, seed cannot be depended on altogether to produce the same variety.

At a recent meeting of gardeners, it was stated by one party that he had grown *Cuthill's black spine* from the seed of 1846, but from the last packet of that date, sown this year, only one seed of twelve vegetated, and he had taken a considerable number of cuttings or rather layers from it, all of which were in full bearing, and he should continue to keep stock from it. He had always found the seed produce excellent fruit, although not always alike. He had been able to keep the stock over from year to year, without any perceptible difference in the vigour of the plant, and the plants from layers begun bearing when not a foot long. He had last year sown a few seeds from one of the handsomest cucumbers he ever saw, but, instead of coming like the parent, they produced fruit almost as taper as a carrot. It was observed by several that there was no hope of seed being true, unless we would devote a box to a single plant and be content with the first handsome fruit, cutting all others away, and arming the box with gauze or thin muslin to keep out the flies, which may wander that way with the pollen of some other of the family, perhaps vegetable marrow. However, the ordinary way of saving seed is to set the bloom of the first promising fruit, which, if properly fertilized, is past taking hurt by any mixture of the breed. Still, nothing can be so certain as cuttings or layers.

Hereford had its Horticultural Society for many years, and fell back in horticulture as the society became neglected and died. It is a source of some gratification that among other signs of better times for the science,

A new Society has been formed under the highest patronage, and a very creditable display was made at the first exhibition, on the 17th instant. Roses were remarkably fine in all the classes; grapes, melons, peaches, and nectarines, were good; fine vegetables abundant. Fuschias better grown than we usually see them near London; calceolarias purchased in London at three guineas per dozen, well grown, but mere rubbish. This is not a little discouraging to the country growers. Geraniums with hardly half a dozen sticks. Bouquets and designs were numerous, and upon the whole the Society may be considered well-established and liberally supported, one of the signs of "a good time coming." The prospectus made an announcement, that all things would be judged by the standards laid down in "The Properties of Flowers and Plants," and the author was appointed judge. The only drawback on the first show

was a want of room. Four marquees on the cattle green were insufficient for a proper display of the plants.

There must be on the part of fair showers a sharp look out for the exhibitors who show other people's flowers, or use deception in exhibiting. Several persons who are alleged to have done this are the common subjects of conversation at floral meetings. We trust that this hint will be taken, and that those who have transgressed in this particular will at once abandon it, and in this hope we abstain from mentioning names.

During the meeting of the British Association at Ipswich, in the first week of July, his Royal Highness Prince Albert is to be the guest of Sir W. Middleton, Bart., at *Shrubland Park*.

The beautiful gardens and grounds are directed to be open to the public on the *fifth of July*. Half-a-crown will be charged for admission, and the money realized will be for the benefit of the Ipswich Museum.

From the 9th to the 12th of December, both days inclusive, will be *The Birmingham and Midland Counties Exhibition of Poultry*, in the Bingley Exhibition Hall, Broad-street, Birmingham.

All poultry must be in the show-yard by the 6th of December. There are prizes for Spanish, Dorking, White Dorking, Cochin-China, Malay, Game, Golden-pencilled Hamburg, including Bolton Bays, Golden-spangled Hamburg, Silver-pencilled Hamburg, Silver-spangled Hamburg, Poland (white-crested, golden, and silver) Bantams, Pigeons (carriers, Antwerps, Barbes, pouters or croppers, runts, fantails, jacobines or cappers, turbits, nuns, arch-angels, trumpeters, and almond or ermine tumblers) geese, ducks, turkeys, and Guinea fowls. Additional particulars may be obtained of Mr. T. B. Wright, Midland Counties Herald Office, Union-street, Birmingham. E. Y.

THE FRUIT-GARDEN.

THE PEACH, THE NECTARINE, AND THE APRICOT.—We must again beg leave to return to these important fruits, for there are matters connected with their culture, which, if missed or delayed now, cannot be carried out with effect later. The apricot will not class precisely at this period with the other two, but a little advice may be offered in a separate form in the sequel.

DISBUDDING.—Although this should have been completed some weeks since, there may be those who have not yet completed the process. To such we say, do all that you intend to do in this way immediately. There is no occasion now to go over the whole ground of the pros and cons again, or to the rationale of this practice; suffice it to observe, that the very highest point of culture requires that not a shoot be left on the tree, which is not intended to be reserved in the future year. This will seem difficult to those whose trees are out of order, or who have not yet learned to comprehend the benefits arising from the practice. It is not, however, our duty to *descend* in the advice given to unworthy compromise, in order to make things more easy; but rather to point to models of the very highest order, which may elevate the standard of culture. Simplicity is, indeed, admirable; but there exist points in which an extreme of the kind will not quite reach the case; for there are proceedings in gardening affairs, which, although they involve but a simple principle or two, yet carry of necessity an appearance of complexity, especially to the uninformed.

However, there may be exceptions to this thorough disbudding. If a tree has been out of order through the attack of insects, or if the root has been in ill-condition, and the tree is just rallying from a "fret," then, indeed,

the practice of severe disbudding may, and ought to be, deviated from. Trees in this condition generally make an effort later in the season to recover their lost ground; and, when such is the case, a much greater quantity of young spray may be retained for awhile. This will encourage a renewed root-action, on which so much depends; and which, of course, has been thrown into a state of torpidity by the "fret" before alluded to. In the course of two or three weeks, however, some of these shoots will begin to overtake the others, and the best way, then, is to commence stopping the points of some of the most doubtful, for the ripening of the wood has to be thought of, and this depends on access of light, as, also, in a minor degree, on a tolerably early cessation of growth. With regard to healthy trees in full bearing, the case is widely different. Here, it may be presumed, the root is all right, and no *doctoring* requisite.

In such cases there does not appear a single excuse for a person (conversant with the reasons for, and the practice of, disbudding) retaining a shoot more than is requisite; for we well know, that every little obstruction of solar light through the autumn is, in our wayward climate, a decided loss; since *all* is required to ripen the wood, the all-important basis of successful culture. Let the trees, therefore, be closely examined this once more; for nothing will remain to be performed henceforth but a little "stopping" in August, of which more in due time. Let every improper shoot be either stripped away, or what, perhaps, is better at this period, pinch or cut them back to about a couple of eyes, for the stripping of them now is apt to produce a wound—a thing by no means desirable. Another proceeding of some importance, is to see that no crowding takes place through the mere extension of the legitimate shoots. These, in the course of elongation, frequently overtake others a-head; and although there was sufficient room for them when first trained in, yet, in course of time, they overtake each other, and produce injurious effects through shade. Stopping is here of much service, be the period what it may; but a selection must be made as to the proper shoots to stop. In all such cases, it is best to suffer the most advanced leader to proceed; such leaders, we mean, as represent a shoot, or rather branch, of some consideration; one that we may count upon as constituting a portion of the permanent fabric of the tree; and, if such proceeds as a principal from the very bole of the tree, it deserves a double consideration. Those pressing on it may be stopped according to the order in which they grow, always keeping the previous suggestion in view. There is, however, one collateral consideration which ought to produce a bias, less or more, in this procedure, and that is, the comparative strength or leanness of the shoot or shoots in question. One fact must ever be kept strongly in view by the peach dresser, and that is, the fact that when it is desired to draw an increase of sap into any given shoot, stopping is decidedly inimical to such intention. Our olden gardeners used to say "stop it to strengthen it;" and, in one sense, and that a limited one, it was true; but such has reference mainly to the business of the present year. The leaving inferior portions of the tree growing in order to increase vigour in these parts, is a matter bearing on future seasons. Those especially, who are rearing young trees, will do well to keep a fixed eye on this principle, for it has a closer relation to such than to established trees, although always a maxim of importance.

ROBBERS.—These must be treated as a class entirely distinct from the preceding; inasmuch as their effect, both on root and branch, is much more powerful; inducing the former into an unnecessary amount of action, and the latter into a degree of unequal luxuriance, which, unless arrested, soon destroys the quality, and, by consequence, the symmetry of the tree. It does really

seem strange to see with what pertinacity some persons will cling to these gouty monopolists; shoots of some two to four feet in length, may not unfrequently be seen laid in their whole length, only to furnish exercise for the pruning knife in the ensuing winter. Does it never occur to those that practice thus, that it is but "doing and undoing," and that it is quite easy to make one gross shoot into four or five useful ones.

Now, it would appear from experience, that the encouragement of these robbers for a short period is, under certain circumstances, of much service to the tree, by calling into being a more active state of root, when the latter, from overbearing, age, or other causes, has become somewhat supine. But having produced such effects, which will be the case, try the middle of June with those which spring forth during May; the sooner their heads are pinched off the better, in order that the spray which emanates from them may become tolerably well ripened. Such, however, to be thoroughly depended on, should be produced in the end of April; and, in such case, they may be pinched long before the middle of June, producing secondary shoots, or side-spray, which may be ripened in tolerable perfection. This side-spray, nevertheless, should also be pinched about the first week in April; which will much facilitate its ripening, and throw the sap, which had been appropriated by them, into inferior, but more fruitful channels.

These robbers will, moreover, require a *thinning out* of their side-spray after pinching; for where trees are wild in growth, a host of such will sometimes be produced, even these secondary shoots bursting into spray: such acquire a most prejudicial amount of luxuriance, and constitute a case for root-pruning, or entire transplanting. Where such is the case with young trees, with little or no fruit on them, our advice is, throw out a trench at about three or four feet from the wall, in the middle of August, and let it remain out for some weeks. In doing this, every root may be cut through that projects beyond this line. The tree may droop a little, but this does not matter, provided the cutting is not carried to a *great extreme*, and that the subject operated on is very gross and unfruitful. If this is performed judiciously, there will be no occasion for transplanting, unless the soil beneath is considered improper in texture or stagnant. In filling this excavation again, which may be done in the beginning of November, some free turfy loam should be substituted, if at hand, for the old soil; but adding no manurial matters.

STOPPING.—One of the last proceedings which we have to recommend, with regard to the summer culture of the peach and the nectarine, is a somewhat general pinching or stopping of the young shoots about the first week in August. This is a course not generally practised; and is, when trees are hard worked, or lean in condition, more honoured in the breach than the observance. Nevertheless, we have always found it good practice, and it would seem, moreover, a proceeding strictly conformable to a scientific view of the affair. Our view of the doctrine stands thus:—The thoroughly perfecting both wood and fruit, on any given fruit-tree, subjected to a less amount of heat and light than it enjoys in its native clime, depends on a proper concentration of its energies about the period of the ripening of the fruit. Rapid growth, or, indeed, growth of any kind, as involved in extension principally, is somewhat opposed to this concentration of energy. Moreover, mere extension of parts at late periods is antagonistic to that distension of the full-grown leaves, the principal source of the accretive principle, which guarantees a liberal amount of secretion, on which, of course, the size and flavour of the fruit depends. Stopping at such a period, then, tends to sustain the full capacity of the principal leaves, and the functions of the tree henceforth becomes almost entirely elaborative. We name this by the way, and

merely as an opinion; it will serve to set some of our reader's craniums at work; and we doubt not that many of them have the bump of vegetable physiology more fully developed than we of the blue apron and crooked knife.

APRICOTS.—Where strong and young trees are producing very robust shoots, these should be stopped before June is out, if possible, in order to cause them to produce moderate side branches, and to bring forward the inferior portions of the trees. Care should be taken to keep down all foreright shoots produced from snags, or gross shoots pruned back; such waste spray suffered to smother the true blossom spurs in embryo, are, doubtless, one of the chief causes of abortive blossoms in the Apricot. The finger and thumb, therefore, must be kept going all through June and July, after which there is much less tendency than in the peach to produce late spray. Above all, let not the caterpillar pursue his ravages unmolested. It is astonishing what trouble and loss may be prevented this way, by picking carefully the patches of eggs of the red-bar moth in the pruning season; from these little paste-like patches, those larvae are hatched, which very frequently commit such fearful havoc amongst the foliage. R. ERRINGTON.

THE FLOWER-GARDEN.

COMPANION TO THE CALENDAR FOR JULY.—This is the least busy month of the whole summer in the flower-garden, and the principal operations requiring immediate attention tell their own tale on the spot, without the aid or forethought of the remembrancer; every plant that requires a stake, or to be tied up, or trained on the ground, is seen as we walk along; and every bed or plant which needs the assistance of strong water may as easily be noticed. It may be useful, however, to say that July is the very best time in the whole year to give *liquid manure* to every thing we want to strengthen or push on, as now things are in the height of their summer growth, and they can be more freely dealt with on that account.

Roses, particularly, are now in need of a strengthening supply, after the June flush of their beauties is over; no plant stands more in want of, or is more improved by, hand-feeding, than the rose; indeed, the great growers of them put far more stress on their summer feeding, than on the kind of soil or winter dressing most suited for them. I am almost sure that many people are quite wrong in pruning their very strongest roses in the spring too much, particularly strong climbing roses, and those called hybrid Chinas; if such need much pruning, and they almost always do in good soil, I cannot help thinking that July is the best time to prune them. I have done so myself, for many years, with the best effect. It is not so easy, however, to break new ground on paper, as to try experiments in the garden; but having established a monthly paper in aid of the Calendar, it seems to me that I should not pass over any practices, new or old, because it is not fashionable to write about them, and to explain the reasons on which they are founded as well as I can. It is now just twenty-three years since I saw the best gardener that ever Scotland produced, the late Mr. McNab, of the Botanic, at Edinburgh, pruning his strong roses in July, something in the way that others do in the spring; full two-thirds of every strong shoot on a bush was cut off, just after flowering—that is, unless it was wanting to keep up the roundness of the bush, or, if against a wall or fence, the shoot was necessary to fill up the space; all other shoots were dealt with as I say, and very small ones were cut nearly to the bottom, and some were cut off altogether. Then, by the end of August, when a strong shoot from any of those cut parts should head above

the rest, and promised to become straggling, it was topped or stopped down to the general height, and so the whole remained all the winter, and till very late in the spring—I mean all very strong roses—when the mere tips were only removed, and in some cases not even that; nothing could have answered better. A general cutting or pruning of roses in July need not at all to be considered an irregular or a novel practice; hundreds pursue it every year all over the kingdom; the only novelty is in recommending it as part of the routine practice in the rosary. At any time during the summer, the gardener, or amateur, who is particular about “a fine head” of standard roses, will not hesitate one moment to cut in any one shoot which may grow out much beyond the outline of the others; and when you ask the reason, it is ten to one if you are not told that it is done for the look of the thing; they cannot bear to see the symmetry of their rose heads deranged by strong growth; but depend on it, if the practice thus indulged in, year after year, “for the look of the thing,” was against a fundamental law of rose growth, the “look,” in the long run, would be something else besides symmetry.

Cuttings.—Towards the end of the month we begin to put in cuttings of all the scarce sorts of bedding geraniums, if only a few of each sort, and so continue on with them to the end of September. As soon as a few cuttings can be spared, they are taken off, and to get on a very scarce kind as fast as possible we put it under a hand-glass, which we shade at first in the middle of the day, as all our geranium cuttings are planted on a sunny border; then towards the middle of September, the plants from these early cuttings are potted singly in small pots, and are rather better nursed through the winter than those of which we possess a full stock; early next spring their tops are made into cuttings, the bottoms forced in heat, to make more cuttings, and before the end of April there are as many plants as will fill a bed of moderate size, unless the new or scarce kind is a very slow grower indeed, such as the *Golden Chain* is in most places. With the exception of geraniums, we put all cuttings of the flower-garden plants under a north wall, in July, and when a nice border is made up purposely for such things, almost every thing may be had from cuttings in July, if we begin in good time. I recollect, many years ago, having had a large collection of very fine *Dahlias*, which were planted out in large pieces, about the middle of April, and by this time they had made so many shoots from the bottom, that we had to pull out as many as seven or eight stalks from some of the roots, and wheel them out of the garden as so much useless weeds. A baker who was passing at the time, asked permission to take away some of them; he had as many as he could carry, and, I believe, he rooted every one of them, at any rate he had a large bed of *Dahlias* in the autumn from that lot of cuttings, although he had nothing better to get them on than the open air.

Chrysanthemums.—When they begin to grow away freely in the open ground is the right time to draw some of the longest shoots to one side, preparatory to laying in the points by-and-by, for making very dwarf plants, which often come in useful after the first October frosts are over, to keep up the show as late as possible, after most of the more tender things are done with.

Layering.—This is the principal month for layering all soft-wooded things, that do not come so readily from cuttings; and to those who do not understand how to make layers properly, we must say that layering is a half-way method of making cuttings, so as to get them to root before more than one-half of the shoot is separated from the parent plant. In making cuttings, we cut just under a joint, for two reasons, first, because fresh roots come easier from where a joint is, and, secondly, the knot at the joint is harder than the part

between two joints, therefore, is not so easily or so soon killed by damp, or any other kind of injury. In making layers, we also begin the cut just under a joint, but only half-way through it, then, by turning up the edge of the knife, we split the knot or joint in two, and the split part we call a tongue; a shoot that will bend about, without being easily broken, as a young willow, may have this tongue cut on the underside of it; but brittle ones that are apt to snap asunder on being bent must be tongued on the upperside, and some there are which few can tongue without some breakage. Then come a number of contrivances to help the rooting and tonguing, such as giving the shoot a gentle twist, taking off a ring of bark, and sometimes a shoot is split by thrusting the point of a knife right through a joint, and putting a wedge in, to keep the parts open, till such times as roots are formed. Whatever way the shoot is prepared for layering, the cut part is buried an inch or so in the ground, to make roots; and a little clean sand put round the layer, will both help the roots, when they come, to push along, and also the tongue from taking harm from too much damp.

Within the last few years, they have found out a famous way of getting a large stock of *Hollyhocks* from cuttings made in July, in a very curious way, which, although often mentioned, I must not let slip in the *Companion* for the month. When the hollyhocks are tied up to the stakes for the last time, all the inferior stalks, or those that are likely to hide the rest too much from the sun, or, indeed, any that are too much crowded or ill placed, were cut away as useless formerly, but now they are made into cuttings, to increase good sorts, or save one the trouble of sowing seeds of them every year. Every leaf on a shoot will make a cutting, if you take a part of the stem and the eye at the bottom along with it; but the easiest way is, first of all, to cut the shoots into as many pieces as there are leaves or joints, then to split the pieces down the middle, so that every half has its own bud and leaf-stalk; the blade of the leaf is not necessary, but it is best to keep two inches of the leaf-stalk; the soft pith in the centre of the split parts should be scraped out, as it is liable to cause damp or mouldiness; the pieces are then planted an inch deep in sand, under a hand-glass, or a cold, close frame, and sometimes with no better help than the shade or shelter of a north wall; part of the leaf-stalks are above the sand, and mark the centre of each cutting; the bud at the bottom of the stalk will soon push, make roots, and be in all respects as good as a seedling, besides being true to the sort. Now, I dare say, there are hundreds of plants that may be increased just in the same way, as well as the Hollyhock, although we have never found them out. Who knows but the old *Fraxinella*, or the Tree *Pæonies*, that are so difficult to increase, might not root, if thus tried early in July. Perhaps hundreds of roses would come that way also; for what is the process after all, but a kind of budding, only we take more substance along with the bud, therefore, let us all try how many things each of us can root on this plan, and all that remains for me, is to advise the use of hand-glasses where the shoots are small, or with little substance; and, for such that it is more likely than not that the leaf will be of great use in hastening the formation of roots, and, also, that leaves thus detached in July should never see the sun, or be exposed to free air, till roots are formed.

Pot Geraniums.—I would not throw away the oldest and most straggling *Geranium* I ever saw in July, as some people do, as soon as they are done flowering. I would cut them down half-way of the greenwood, and plant them out somewhere to take their chance; they would flower in the autumn, and be useful to get late cuttings from besides. I would do the same now with all kinds of greenhouse plants, heaths, and all that were

too old, or too big, or too anything I did not like; after the middle of July there is hardly a stove plant in the country but would do planted out for two months or more, so that old, worn-out subjects, even from the stove, need not be thrown away altogether. Mr. Barnes planted out beds of pine-apple plants, and ripened their fruit in the open kitchen-garden; and I am quite sure that two or three-year-old *Ixoras*, now showing for bloom, might be safely planted out in peat beds, or on sheltered borders, and that they would flower that way as freely as the *Rhododendron*. All the beds ought to be now full. All plants that require stakes should have them, but not to be tied up close and stiff. Every seed-pod should be cut off, and every annual pulled up when it is past its prime.

D. BEATON.

GREENHOUSE AND WINDOW GARDENING.

A CHAPTER ON GENERALITIES.—A traveller who wishes to retain in his mind's-eye a vivid recollection of the scenery through which he is passing, is not satisfied with looking right a-head, or even to the left and the right, as he passes along, but will frequently stand still, and look behind him, that the objects that arrested his attention may be seen from as many points of view as possible. If he does not do so, his idea of the landscape panorama would be so imperfect, that in beholding it afterwards from some different position, he would scarcely recognise it to be the same. Great as are the advantages of the *rail*, it totally prevents these lingering, but fast-holding-upon-memory, glances; and the only consolation is, that we can so quickly and easily see the same objects again. Though little noticed by our philosophers, there is reason for believing that this very ease of travelling, with all its advantages, will have a tendency to change our national characteristics, and thus superinduce the light, airy, and superficial—instead of the high-toned, deep-felt, and enduring. Cheap literature is the railway of knowledge. Its advantages are next to incalculable for the present, and gloriously hopeful as to the future; and yet the very ease with which knowledge is obtainable, is apt to produce a carelessness of application, and a merely superficial acquaintance with, instead of the close study of a subject in all its diversified bearings. If true in any thing, this tending to superficiality is peculiarly true in respect to a considerable number of the readers of the cheap periodicals on gardening. Few, indeed, are the supporters of this little work, even when meeting with a fresh idea, that would ponder over it with equal earnestness, until every detail was mastered, as many of our leading men must have done in the case of the first expensive periodical on gardening, conducted by the strong-minded, noble-hearted, Loudon. The very difficulty of acquiring, with its mournful drawbacks, brought with it at the same time, in the case of the few, an intenser application. These are railway times, intellectually as well as physically, and writers and readers alike must rattle along with locomotive speed. Hence, the puzzling and seeming discrepancy upon any subject, merely because the writers have looked at it from different aspects; the difference, striking it may be at first, melting into nothing as the reader takes in a more comprehensive scope for his vision. Hence, too, the importance in these days of *speed*, and the working out of the give-me-as-little-trouble-as-possible principle; of glancing again and again at the same objects from similar and different points of view, that *repetition* may ultimately accomplish what the studious formerly acquired by their intenser application; that, in one word, hints to *memory* may be given, in unison with those ideas that tend to future progression.

Azaleas.—In most collections the glory of this beautiful flower will be gone. Interest in its welfare must not for a moment flag, if it is expected to furnish a striking ornament in our conservatories in winter and spring. No time should be lost in removing every withered flower and leaf, and, unless when a pod or two of seed is desirable, cutting clean off all these appendages as soon as the bloom fades. In early-flowering plants this will have been done, with late ones it must not be neglected; with early plants, to ensure uniformity of growth, strong shoots may be pinched at the point, and they will then produce two or three, instead of one, while each will have time to ripen a bud for blooming next season. This stopping, unless in extreme cases, should now be more sparingly resorted to; and even then, the plants should command a close humid atmosphere, to ensure rapidity of growth, and then a drier airy situation, that that growth may be ripened and hardened before autumn closes. The sooner the wood is ripened, and the flower buds thus formed, the better will the plants bloom, and the more easily will they bend, and suit themselves to the circumstances in which you wish to place them, as respects accelerating or retarding the bloom. Instead, therefore, of setting your plants, now finished blooming, in a cool place behind a north wall, give them the closest and warmest place in your greenhouse, with plenty of moisture at root and top, until you get fresh growth freely commenced. A pit kept close, or a late forcing house, would answer a similar purpose. If thus attended to, and nothing but bloom produced (no seed), plants will thrive in the same pots for years, with perhaps a slight top dressing; but if shifting is desirable, it is best done, not *before*, but just *after*, growth is fairly commenced. If the ball is well soaked before hand, and the hair-like roots, though gently disentangled at the outside of the ball are not injured, the plant will receive no stoppage in its growth; the advancing shoots ensuring a quick root action in the fresh soil. When the object is to keep a specimen in good flowering condition, the shift should always be small; when from free growth a specimen is to be made, the shift may be large; but in an established specimen, unless the ripening process is soon begun, a large shift will be likelier to give you fine foliage instead of flowers.

After trying several compositions, nothing seems to answer these greenhouse Azaleas so well as fibry sandy peat, with nodules of clean charcoal, to assist in keeping the soil open, when it otherwise would get much compressed in the course of years. Watering with clear water is generally to be preferred; weak manure-water may be given when growing and opening their flowers, but it must be weak. Green-fly is easily settled with tobacco smoke, red-spider with fumes of sulphur, but the thrip is hard to *flit*: in the case of all these free growth now is the best preventive. For the thrip, dipping the plant in thin mud, and cleaning it a day or two afterwards, washing with gum-water, lashing it when lying on the ground, (to prevent the liquid entering the pot), with clear soot-water, and a weak infusion of bruised laurel leaves, I have found less or more effectual; but prevention is better than cure, and free growth now is the best prevention, and not the worst cure, provided always that growth is sufficiently indurated before winter.

Camellia.—Similar remarks will apply to this winter-flowering plant. A few exceptions may be specified. It will stand *cutting in* better than the azalea. For such plants a higher temperature will be no objection. The heat from sweet decomposed dung will cause the old stems to break freely, but such heat is always a precarious matter with azaleas, as a little steam from dung soon does for them. In potting, a considerable portion of sandy loam, enriched with leaf mould, or dried old cow dug, may with advantage be used. As soon as the buds are fairly formed at the points of the shoots, the

plants must be gradually inured to a drier and sunnier atmosphere.

Calceolarias.—Cuttings of shrubby ones will propagate very freely, in shady places, under hand lights, or even under a frame when there is a little bottom heat. If the plants from which the cuttings are taken have not been too long exposed in the open air. Unless for winter-flowering plants, they will be soon enough inserted in August and September. Large, fine-flowering florists' varieties, herbaceous or otherwise, cannot be looked after too carefully now. If either thrip or green-fly are allowed to ravage your old plants now, however fine they may have been, and however valuable the kinds, I would give but little for your stock, either of plants or cuttings. It is very difficult, and not at all desirable to preserve plants that have flowered over the winter. Treat the plant how you may, it will be subject either to damping, or getting long-legged; while the beauty of a Calceolaria consists in no mean degree in having fine leaves hanging over the sides of the pot. It is not *desirable*, because cuttings struck during this, or rather the three following months, will take less room in the beginning of winter, and yet steadily grown on, will form a very large specimen before April. Cuttings taken from plants, kept cool in summer, at the back of a north wall, inserted in sandy soil, on raised mounds, in such a cool shaded position in September, yielded plants that required two men to move them in May. But, as has been already detailed in this work, the blowing off of gnats in a sunny day, and an attack of the thrip, in unison with a good smoking of tobacco, a few years ago, deprived me of a fine collection that had cost me much time and trouble to procure.

Cinerarias.—These sweet gems will now be nearly over. Late sown spring seedlings will bloom best in a cool, shady place. Seed for early winter-blooming may be now sown, and that from the finest kinds only selected. There is much interest in growing seedlings, even though you only get one in a hundred worth keeping. Small pots for them are most desirable, until you see what you have got. In limited space, and where the perception of the beautiful is strong, amateurs should confine themselves to the best flowers out. Young plants generally bloom better than old ones, and they look so much neater and healthier. To procure them, small cuttings, or rather suckers, may now be taken off, and inserted under hand lights; or the plants, after having the flower stems cut down, may be turned out into a shady border, the ball surrounded with rich light soil, and well watered when necessary. By August or September you will thus obtain fine, strong rooted plants, sprung from your old one as a stool; and these, if potted early, will come into bloom early. Either by such as these, or by seedlings sown early, the conservatory and greenhouse may be kept gay all the winter. These I think the best modes for general use. But last season, owing to a press of matter, and that great evil-doer, procrastination, our Cinerarias were not planted out until it was too late to do so, but were left standing, and pretty well starved out, in a very unsuitable position to be left in. About the middle of August, a number of those in the smallest pots were picked out, and taken to the potting bench, turned out of their pots, the most of the old soil removed, and the whole of the fry of clustering suckers, with the exception of two or three of the best removed. They then were potted in light rich soil, in small pots, kept close in a cold pit, until fresh growth had commenced, then obtained a liberal shift, and free exposure, until the cold nights rendered shelter necessary, and from these plants I had a most abundant bloom from the beginning of November all through the winter. We may thus obtain the same result from different means.

R. FISH.

HOTHOUSE DEPARTMENT.

EXOTIC ORCHIDACEÆ.

PLANTS THAT THRIVE WELL IN POTS.—(Continued from page 163).

ONCIDIUM LURIDUM (Lurid O.); Jamaica.—Sepals and petals brownish green, barred with deep brown; lip, the same colours, with pink spots in the centre. This is one of the thick, long-leaved species of this extensive genus, and though not so handsome or showy as some, yet, on account of its fine foliage and long branching flower stems, which are produced freely and easily, it is a plant desirable to cultivate. Strong plants may be had for 15s.

O. LURIDUM var. *GUTTATUM* (Speckled var. of *O. luridum*); Jamaica.—The whole flower is of the richest brown, beautifully stained and spotted with dark red. If the species is rather dingy in the colour of its flowers, this variety is really as rich and beautiful. The flowers are produced thickly on stems, four or five feet long, much branched. They are above the average size, and present, when in flower, as fine an appearance as any orchid in the whole tribe. This fine variety ought to be in every collection. It is rather scarce. 42s.

O. MICROCHYLUM (Small-lipped O.); Guatemala.—Sepals greenish red edged with pale yellow; petals, dark red edged with bright yellow; lip white, bordered with orange. It is, contrary to the usual habit of the flowers of this genus, very small, hence its specific name. The leaves are short, thick, and keel shaped, without any spots on them. A very distinct, handsome species. 20s. Mr. Skinner remarks on this plant, "I first found it growing on the top of the Cuesta of Peunlezuellas, about thirteen leagues from the city of Guatemala. It was growing on a bare rock, with a quantity of dead leaves and grasses about its bulbs, and its roots woven into the interstices of the rocks, and mould about it very much exposed to the sun, except during the middle of the day, when a ledge of the rock seemed to afford it a little shade. I afterwards found it in great numbers on the rocky banks of the river Michatayal. I never saw it except in such situations, generally exposed, and always amongst rocks. It is very fragrant, and in its native habitat I have always observed the sepals and petals darker and more marked than when flowered in our stoves here. The temperature generally of the above habitats is 68° to 70°, and from being so high and exposed, cold at nights." Such observations as these are invaluable to cultivators, and it would be well if all collectors were to give similar descriptions of the peculiar situations and temperatures of the different habitats of the plants they collect and send home. It would prevent numberless mistakes and misfortunes to which cultivators are liable, when totally ignorant of the circumstances the plants are subject to in their native homes.

O. NEBULOSUM (Clouded O.); Guatemala.—Flowers pale yellow, blotched with faint spots of rich brown. Flowers large and handsome; they are produced upon short stems, rising from the base of the pseudo bulbs. A desirable species. 42s.

O. ORNITHORHYNCHUM (Bird-billed O.); Guatemala.—Flowers pale lilac pink, the centre of the lip is spotted with white. There is a variety with the colour very many shades deeper. The flowers are individually small, but they are numerous placed on the stems, which are eighteen inches long, slender, and gracefully curved downwards. They are so fragrant that they are denominated "the mignonette of Mexico." The ladies wear them in their hair, and a graceful ornament they must certainly be. 21s.

O. PAPILIO (The butterfly O.); Trinidad.—Upper sepals, long and narrow, standing upright; the ground colour is a dark rich brown, barred with yellow; petals

broad and curved; lip almost round, with a dark edge, and large yellow blotch in the centre; the column has a curious form, like the head of an insect. The whole flower has much the appearance of a large butterfly, just alighted upon the long slender stem; the sepals forming the antennæ or feelers; the petals, the wings; the lip, the body; and the column, the head; hence, the very appropriate name—the butterfly plant. This, above all others, ought to be in every collection; the flowers being so large and attractive, and the foliage being also handsome. There are several varieties distinguished by the size, and more distinct markings of the flowers. 10s 6d. for small plants, and 21s. for strong ones. The finest varieties are double the value.

O. PULVINATUM (Cushion O.); Brazil.—Flowers pale yellow, blotched with pale brown. There is a curious tuft like wool at the base of the lip. Individually, the flowers are not of a showy character, but they are so numerous placed on the long stems (often eight or nine feet in length), that they form a pleasing ornament, when in flower, to any collection. The leaves are a foot long, and three inches broad, and the pseudo bulbs are short and broad. A desirable species. 31s. 6d.

O. SANGUINEUM (Bloody O.); La Guayra.—Flowers dark crimson, spotted with red. The leaves of this species are more than a foot long, and beautifully spotted. Botanists are not agreed whether this is a distinct species or not, but for the ordinary cultivator there are sufficient differences to distinguish it from any other. Perhaps *O. roseum* comes nearest to it, but even then, the flowers of *O. sanguineum* are much more curled, of a darker hue, with a much smaller lip.

T. APPLEBY.

FLORISTS' FLOWERS.

MR. GLENNY ON FLORISTS' FLOWERS.

NATIONAL FLORICULTURAL SOCIETY.—The seedlings here were, for the most part, the same as were shown to the Royal Botanical Gardens. In *Pelargoniums*, *Magnet* came in this time for a certificate, as they said, on account of its colour and bloom. *Elise*, a bright scarlet-pink flower, with a white eye, had a first class certificate; the upper petals dark, with a faded-looking border, but showy. *Ganymede*, already noticed by us, had also a certificate. These three flowers may be grown with satisfaction; but first class certificates ought to mean more than they evidently do mean when they are awarded to second-rate flowers. We should grow these flowers for some good points, but not without seeing that they also have some blemishes. *Magnet*, the most popular, because of its colour and its lasting bloom, is not without its fault. *Elise* is as good in its way, but there is not so much novelty; and *Ganymede's* fault is, that it is too much like many we have, although a degree better than some, being very smooth; these were all Mr. Hoyle's. Mr. Beck's *Incomparable* was commended for colour. The bright scarlet of this flower is striking, but before the last flowers of a truss are open the first have decayed: it wants permanence; and it is also a rare thing to see three flowers open upon one truss. *Arethusa*, rather a striking flower, had a certificate. A fine, dark top and salmony under petals gave it some claim to notice, but it is not first-rate. *Purple Standard*, a fine, dark flower, was entitled to some notice for its general average qualities and somewhat new colour. This had a certificate. It was raised by Mr. Foster, of Clewer. *Ariadne* was similarly honoured, and was, perhaps, equally deserving. *Enchantress*, also, had the same distinction, though not so good. Mr. Ayres had a first class certificate for a well-named fancy geranium, called *Advancer*, and, inasmuch as it is a fair advance upon all we have in form, texture, and habit, though

not a very striking colour, it deserved the honour more than any thing else; but *Caliban*, *Miranda*, and *Gypsy Queen*, had certificates also, which ought not to have been awarded, at any rate till more had been seen of them. They will not bear comparison with *Advancer*. *Beauty of St. John's Wood* was commended for colour; but they might have added for form also; a frilled edge, although a fault, is only one fault, and that by no means fatal in a fancy variety. *Queen of the Fancies* was commended for general promising appearance and form; but, in truth, it wanted novelty and brilliance. There were many other seedlings of Pansies, Calceolarias, Geraniums, &c., some promising, but badly grown, or out of condition. The principal fault we find with the judges at the National is, that they have not courage to condemn if they can find any redeeming point which they can notice. Thus we have a shilly-shally policy adopted, which is to be regretted. Whether it be the fear of offending, or the natural timidity of persons who have not confidence in their own judgment, we know not; but we have constantly such awards and opinions as "commended" for "colour," or for "habit," or "general form," or "we should like to see it again," or some other single point insufficient to redeem it, when the production ought not to be mentioned. We happened to meet one of the censors on the ground at Chiswick, and he informed us he had been summoned to act, but that he had offended his customers, and lost them, by judging one season, and he should not act. This is far better than acting and shrinking the responsibilities by half awards. There is nothing so important as decision; and we never wish to see a thing a second time unless it is out of condition, and has every appearance of a really good variety. Now many of the subjects half commended at some of these Societies have really no pretensions to favourable notice, because they never can be useful, and multiplying the subjects brought before the public only perplexes the amateur.

We have seen some of the flowers that were shown at the *Botanical Gardens in the Regent's Park*, but which it was almost impossible to see among the crowd. PELARGONIUMS. *Flying Dutchman* (Turner), which was a good deal noticed on account of its dark colour, has a bad lower petal. *Ariadne*, which obtained a certificate of some kind, was tolerable. *Optima* was a beautiful colour. *Scarlet Eclipse* has nothing but its colour to recommend it. *Purple Standard* was awarded a second prize; and, as it deserved some notice, perhaps it was a proper distinction. As it will occur very frequently that we come across the same flower several times, we wish it to be perfectly understood that we describe everything as it appears. If, therefore, any one shows a thing one day in bad condition, he may find us condemning it, and another day in good condition, our opinions may not match; but in a summary, at the end of the season, we shall give the claims of all according to the way in which each maintains its character or otherwise.

CALCEOLARIAS (*A Lady, Leatherhead*).—No. 1 is certainly a *Goliath*, but too flat for exhibition purposes, though very showy. Nos. 2, 3, and 4, are pretty in colour, but we have hundreds of better form. They will make pretty ornaments in a greenhouse, but we cannot recommend them to be named, except for distinction at home. They were well-packed, and arrived in good condition. (*C. P. Burnley*).—Very pretty; but we have daily many too much like it, and some better. (*D. D., Stafford*).—A very nice variety; but if it be not *Lady Anne Chatteris*, it is too much like it to be useful. By the way, never use cotton lint for packing flowers, *moss or leaves always*.

PANSIES.—From *Mr. Salter, of the Versailles Nursery*, we have a dozen varieties of fancy Pansies, richly striped in all colours, presenting a most extraordinary new family, as unlike the general run of Pansies as can

well be imagined, to maintain something like the form. They are not, strictly speaking, show flowers, and yet two or three in a stand would be striking. Send us the whole collection of blooms, with figures or names, and they shall be distinctly noticed, with a hint as to which are the best.

PETUNIAS (*W. D., Suffolk*).—Very large, but miserably thin; even the size is no novelty, for the French varieties of this season are monstrous, and that is the only feature to notice. (*M. M., Uxbridge*).—Only No. 4 worth trying again, and that only for its colour. The others have no saving feature.

VERBENAS (*R. T.*).—If the variety sent for opinion was sold for a seedling, it is neither more nor less than a deception. It is the old *Marchioness of Ailsa*, and not a seedling at all, though better than half the seedlings that come to us.

FUCHSIAS (*A. B.*).—No. 2 too much like *Fulgens*, and not so good a colour; all the seedlings that take after *Fulgens*, are worse in colour. No. 1 is no better.

Beauty of Montpellier geranium. We have blooms of this just now, and it looks well among an ordinary collection; it is bright, rich, and showy, with a white centre. The divisions or indentures between the petals are, in our specimens, too conspicuous.

ROSES.—*P. M.* has been imposed upon. *G. B.* is not *Geant des batailles*, nor the white rose a new one. The former is *Brennus*; the latter, *White globe hip*. The seedling, which "is to beat everything," has been out these many years; we grew it in 1832, under the name of *La Tuturella*—named because of its dying off a dove colour.

E. W.—*Little Wonder* Cineraria has certainly good properties. The notch is scarcely perceptible in the worst flowers; while in the majority it is not perceptible at all. The flower, moreover, is close and circular; but it is too small for a show flower. The colour is not new: white, prettily tipped with crimson; the selfs and shaded varieties are, at most, pretty border flowers. G. GLENNY.

FLORISTS' FLOWERS CULTURE.

THE DAHLIA.—The plants of this fine autumnal flower, at least the older kinds, will now be all planted in the places where they are to flower. The kinds that have been sent out in May, or probably June, will require a certain preparation previously to planting out, and that, as they generally come from the dealers in small pots, is to give them at least two pottings previously to placing them in the situation where they are to bloom. Pot them first into pots four inches wide, place them under a cold frame, kept pretty close for a few days, and then give plenty of air as they begin to grow; in three weeks they will have filled these pots with roots, give them a second shift into six-inch pots, and replace them in the frame, shading from the sun for a few days, then give air and water abundantly for three weeks longer. They will be then fine, strong plants, fit to be planted out with every prospect of a good bloom early in the season. Without this preparation they will stand still a long time, and probably not flower satisfactorily this season. Prepare the ground for them in the same manner as we have described, frequently, in former pages of THE COTTAGE GARDENER. Dig deep, and give plenty of well decomposed manure. A wheelbarrowful to each plant is a good rule.

Stakes, if not already placed to each plant, should now without delay be applied. The best are the thinnings of larch plantation, when they can be had. These last longer than any other. The next best is made of well-seasoned deal, cut to the proper length, planed, and well painted. For tall growers, they should be at least six feet long, one foot to be driven into the ground. For more dwarf kinds, five feet will be sufficient. Place them

at least six inches from each plant for if driven in close, they would injure the roots, and, perhaps, even wound the bulbs. Tie the plants to the stakes early, to prevent the winds from shaking them. Do not tie them too tight, as the stems swell quickly, and would soon be cut with the tie. Should any branches appear below the leading shoots, they should be cut off close to the stem, to strengthen the main shoot.

Water.—This necessary element, should the weather prove dry, should be given abundantly, even in this early season.

Mulching.—To render this watering more effectual, cover the ground all round each plant with short littery dung. This prevents the moisture from evaporating so soon as it otherwise would do; previous to laying it on, stir the surface with a short three-pronged fork, which will open the soil, and allow the rains to wash down the nutritive juices of the dung to the roots.

Insects must be diligently looked after, and destroyed, or they will have no mercy upon the Dahlia, even though it be a half-guinea one. In new ground, there is generally more than enough of a tough brown grub, about one inch long. They burrow just within the soil, and high cultivation renders the Dahlia, and other florists' flowers, peculiarly their prey, for if the ground were allowed to be covered with weeds, the grubs would feed partly upon them, as well as the choicest flowers, and it follows as a natural consequence that, if the natural food is extirpated, they are the more likely to find out the stems of our favourite and costly flowers to feed upon, when there is no other food left for them. These enemies may be feeding even when we see the plants before us in apparently good flourishing condition; let them alone, even for a day and a night, and the stem will be eaten through, and our hopes defeated for the season. The only remedy is to search the soil round the stems, for this destructive pest, and when found, let it be destroyed. No application that would not injure the plant has been discovered, that will kill them. We have actually covered them with quick lime, which seemed to have no more effect than as much common earth. Happy is the man who has his garden clear of them! The next destructive reptiles are the white and brown slug. These may be summarily disposed of by watering with clean lime-water. And the green fly sometimes, in long-continued dry weather, settles upon the under side of the leaves and the tops of the young shoots, and makes sad havoc, turning the leaves green, and causing them to curl up on the edges. As soon as they are perceived, no time must be lost in applying the remedy, which is tobacco water. The leaves must be washed with a sponge dipped in the water, and the tops should be syringed with it. Lastly: The earwig makes its appearance, and is almost as difficult to be got rid of, as the grub at the root. Traps made of bean-stalks and pots, with a little hay or moss at the bottom, are good for the purpose, the first should be tied to the stems, and the latter placed upside down upon the stalks. These should be examined early every morning, and the insects shaken into a vessel containing hot water. When the flowers begin to open, it is a good

plan to go out after dark with a light, and then the insects will be found feeding, and are easily caught and destroyed.

Cuttings may yet be put in; the side shoots, when cut off to strengthen the main stem, make excellent cuttings. Put them in in the usual way, round the edge of a five-inch pot, placing them in heat. As soon as they are rooted, pot them off into three-inch pots, and replace them in the frame, and when new roots are formed, gradually harden them off to bear the open air. They may then be plunged in coal ashes in some corner of the garden, and allowed to remain in the pots through the winter. These often survive the winter, when the old thick gross roots perish.

T. APPLEBY.

THE KITCHEN-GARDEN.

ROUTINE WORK.—Make another sowing of *Cauliflower* and *Cape Brocoli*, and continue to plant out in succession the plants that are ready. Attend to the early *Celery* in due season, and encourage a luxuriant growth by the application of liquid-manure. Earth up and blanch a portion, and get out full crops on a good preparation, as previously advised, for autumn and winter use. Give every encouragement to the growth of *Cardoons*, the newly-planted *Globe Artichokes*, *Rhubarb*, and *Sea-kale*, by frequent surface-stirring (crown-thinning the latter), and by occasional soakings of liquid-manure. Pull away the small, weak shoots from the *Jerusalem Artichokes*, keeping a deep, loose surface, of which no plant is fonder, about them; and they will well repay all extra labour by a bountiful produce. *Dwarf Beans* and *Runners* should again be planted, as well as *Windsor* or *Garden Beans* of some kind; late varieties of the *Dwarf Pea* may still be sown. See, also, that the spring-sown *Parsley* is properly thinned; and all that is not inclined to be very curled, take out, selecting only the very best for a standing crop; make another sowing, too, in drills.

Herbs of all kinds should now be watched, allowing them to get well into bloom, and cutting them only when quite dry, to be preserved for winter purposes; they should be dried in a nice airy loft or room, and they will then maintain their natural colour. As soon as they are dry enough to be stored, put them into paper-bags, and tie close, which is the means of preserving both colour and flavour, and preventing any mildew arising from damp, or any injury from dust.

FRAMES.—*Cucumbers*, which have been some time in bearing, should have the old vine cut back, and the young encouraged and layered, and a quantity of fresh earth placed amongst them or about the surface. *Melons*, which have had the crop cleared, should at once be put in order, cleared of the old, naked vine, and the young vine encouraged by liberal soakings of liquid-manure. They should be stored in due season, be sprinkled down in good time, and shut up in the afternoon. As soon as sufficient fruit shows, set as many as possible about the same day, and encourage a quick swelling, as previously recommended.

JAMES BARNES.

MISCELLANEOUS INFORMATION.

OUR VILLAGERS.

By the Authoress of "My Flowers," &c.

It is very refreshing to turn from human nature in its darker garb, and see it in some of its happier moods and forms. When we look round for subjects from which to draw profitable lessons, we are surprised to find, in how many cases evil, and not good, is seen; but sometimes we

are able to rejoice in a picture of peace and pleasantness that cheers us on our way. How delightful it is to see brethren, not only doing well and industriously in their worldly affairs, but "dwelling together in unity."

Farmers ought to be extremely interesting members of a

parish. They are of immense, almost incalculable, importance in the nation; and they might exert a vast influence for good over the labouring population, because they are brought into such close connection with them, and the poor depend so greatly upon them for daily work and bread. Farmers, like all men who live by their earnings, are striving to make money; but, unhappily, in these days, a great many of them are striving to live like gentlemen also; and this is the misery and ruin of men. They keep their carriage, possibly a hunter, too; they have a governess, or send their children to boarding-school, to learn Latin and Greek, or music and drawing; they keep a good table, and two or three bottles of wine upon it; and then they grumble bitterly at the tithes, the poor-rates, and the taxes. Gay dresses for their wives and daughters must be found; handsome furniture must decorate the old-fashioned rooms, where the stout yeomen of former days sat upon polished oak, and sanded floors; and the children, instead of scouring the rooms, and whistling "o'er the lee," at the head of the team, are dressed up like little mountebanks, walking out *genteely* with the nursery-maid. Now, if the present generation of Britain's sinews, for such farmers may be called, were living like the past, they would have been comfortably, respectably, and lawfully filling their little hives with honey, meeting easily, and, therefore, without a grudge, the demands made upon them by their country, whose freedom and peace are so cheaply secured by that which men most reluctantly pay; and they would also be prepared to meet the pressure of trying times, like close-reefed vessels, instead of having their sails torn to shreds by the fury of the gale.

The example of such men as Farmer Steady would do much good in a neighbourhood. He is a "sinew" of the old school; but he has wisely brought up his children in the old school too; and it is a plan which every farmer would do well to copy. He has very lately settled in our parish, but he farmed fifty years under his first landlord—a nobleman whose name will ever be music in England's ear; and he is a man respected by the neighbourhood from whence he came, and highly regarded. He has brought up a large family, some of them settled very respectably in life; whilst the others live happily with their aged parent, whose labour now consists only in toddling about, and seeing that all things about the farmstead are going on as they ought to do. The sons are up before the men come to their work; they are in the stable with their horses, milking the cows, and performing all the pleasant duties of a farm, which in these times are usually left to the 'fagger,' and the labourer. Young Steady is always by the side of the 'nag,' in which ever team he happens to be. He is, in fact, head-ploughman, head-carter, head-husbandman. The peace, order, neatness, and respectability of the farm is striking; no noise, or unseemly language, or confusion, is ever heard or seen. The cows are quiet and contented, the horses willing and useful, all the gates closed, and the buildings in good order. Mary Steady endeavours to fill the place of her mother, who has been dead some years; she bakes, and with her own hand makes up the butter, and does all the house-work, with occasional help. Her brother kills, and beautifully cuts out, the porkers and bacon-pigs; in fact, they turn their hands to every thing, and are not *above* doing whatever is right to be done.

The old farmer, with his clean white coat and stout stick, is always looking after something. He is seen through the trees in the distance, or among the ricks, or watching his son's labours; and he has always a happy face and kind word for all who pass. The tears roll down his cheeks when he speaks of his children:—"They never gave me an hour's trouble, any one of them. They were always good children; and if the lads sometimes got into a bit of mischief, such as pulling the cow's tail, and I was angry, I would throw my hat down on the ground, and they were sorry and ashamed in a minute. They are good lads to work—I always brought them up to it; and they are all fond of each other, and happy together too." The stout, respectable farmer's dress in which the Steadys' appear in church, and their unassuming look and manner, is far more suitable to their station than the smart clothes in which some others of the same class are dressed; and their regular attendance and quiet behaviour mark the reverence

with which they have been taught to regard the house of God. It is pleasant to see the brothers walking home together from church, or strolling out in the evening when work is done, or coming steadily home from market in their neat light cart. There is no idle company or amusements indulged in—no joining the hounds—nothing to interrupt the farming concerns, or lead to expense and dissipation; all is daily honest toil, and evening family comfort.

When times become trying to the agriculturist, it is a very great advantage to him to be occupying his proper place, spending no unnecessary money, and indulging in no unnecessary luxuries. He is much more likely to ride out the storm than a man who has been living like a gentleman, and laying nothing by. When people have a great many indulgences to give up, the trial to themselves and their families is very severe; and they have not the comfort of feeling that they are giving up lawful comforts, but that unjustifiable luxuries are being wrested from them. It is a great satisfaction to an upright mind to feel that, under pressure, it can make personal sacrifices; nothing is *sacrificed* that we ought never to have enjoyed.

A respectable old-fashioned agriculturist like good Farmer Steady, with hard-working, well-conducted, quiet sons and daughters, a thankful heart, and benevolent spirit, is one of the most beautiful sights that our beautiful land presents. The British farmer stands foremost in the ranks of his monarch, and in the sight of his own people. On his prosperity rests that of all classes above him, and below him. There is no sight more stirring to the heart of a true Englishman, than a body of stout, sturdy, prosperous farmers, jogging along the road, on their sleek fat horses, in all their rough, unpolished oak-heartedness. They, and the labourers on their land, are the bones and muscles of old England; when they are strong, England flourishes; when they decline, her joyous spirit fades. But let us remember *when* it is that a blessing descends upon her own peculiar source of wealth—the tillage of the soil. It is when she worships the Lord "in spirit and in truth." When is that blessing withdrawn? When men "sacrifice unto their net, and turn incense unto their drag; because by them their portion is fat, and their meat plenteous." Unless we "hearken unto the voice of the Lord our God, to observe to do all his statutes and his commandments," His curse will surely rest upon our "basket, and our store." "The earth is the Lord's, and the fulness thereof."

ALLOTMENT FARMING FOR JULY.

As the routine of affairs at this period is very simple, and mainly comprised in clearing processes, we hope to be pardoned for prefacing our observations with a few remarks of a general character, and bearing more particularly on the appropriation of land by persons in a position to keep a cow or two, or, it may be, a horse. Having repeatedly dwelt on allotment affairs as pertaining to the mere cottager, the suburban mechanic, or the farm labourer, we are the more emboldened to pursue this course, inasmuch as, from certain queries which have come to hand, there is reason to suppose that a quarter of an hour's chat over the subject will be graciously received.

One of our correspondents wishes for a four years' course on a half-acre devoted entirely to cow-keep, and, as this is too late a period to commence such a course as we should have to propose, and would, moreover, with ordinary allotment remarks, occupy too much of these columns, it must stand over until the autumn, when we will undertake the task with pleasure. There are, however, points in our correspondent's letter which it will be well to advert to, inasmuch as an attempt to advise in this case will elicit remarks which may prove useful hints to many others of the numerous friends to THE COTTAGE GARDENER. It will be well, as prefatory matter, to quote a few of the difficulties as stated by our querist.

- 1st. The difficulty of observing a good rotation, inasmuch as "the same sorts of food are always wanted."
- 2nd. "Roots and green crops always wanted."
- 3rd. "Having pasture, I want more roots than green crops."
- 4th. "Shall be obliged to change one root for another: this always objectionable."

The writer here adds, "I think of taking more land into spade culture, so as to grow wheat for my own bread, and the horses' oats, straw, &c."

Now, with regard to the policy of growing bread-corn, we do think it bad policy; it will lead our correspondent too wide of his main point, viz., to secure good keep for his cows and horse, to which, we presume, may be added, pigs. With a free-trade in corn, persons thus situated will always purchase wheat both cheaper and better than they can grow it, inasmuch as small plots of wheat generally pay a heavy toll to the birds, and a bad harvest compels the owner either to use bad bread or to sell his wheat ruinously low. If such small holders, who keep a horse, can manage to produce their oats, it is a far more advisable course; for, in the first place, the oat-straw will prove much more useful than wheat-straw, as the cows may be principally kept on it when they are dry, and during the winter. Oats, moreover, are a capital preparer for root crops, and leave the land in a better state than wheat. Again, oats are generally an earlier harvest, and, if necessary, their stubble can be immediately broken up, and a good crop of vetches got in, or even a crop of cabbage.

The difficulty of observing a good rotation will vanish like smoke before good culture. From the point where we sit to write, we can see a plot which has had mangold wurtzel on it for nearly twenty years, with only one or two trifling intermissions, and, really, the last year's crop was fully equal to any of its predecessors; not that we advise such a course, for there is nothing like a judicious rotation; and, doubtless, the recurrent mode alluded to involves a waste of manurial matters; the crops have, indeed, to be "hired" to it, as our honest Cheshire farmers say. With such an array of eligibles as the Swede, mangold, potatoes, carrots, parsnips, and cabbage, where is the difficulty, especially with the addition of an acre or two in pasture, which, if properly contrived, might have a portion broken up every year, and, after a three or four years' course, laid down with "seed" again. Above all the crops which possess a claim to fresh soil, where such a course as this is pursued, the potato stands first; no person who has been used to potatoes from unmanured sward will eat them from old soils if he can avoid it. With such a rotation, therefore, we would always grow the potatoes on the new ground, without manure; these will prove an excellent preparer for any of the valuable root crops. If stiff soil, the Swede, globe mangold, or parsnips; and if sandy, carrots, or the long, red mangold; finishing the course with oats, and "seeding down" with them.

Persons situated like this correspondent, whose letter we select, thinking its answer will suit several cases, should, in seeking advice in such matters, always state the exact amount of land they hold, and the precise amount in pasture; without such data, and the character of the soil and subsoil, it is impossible to give a complete answer. But enough for the present; we must now turn our attention to the small allotment holder and the cottager.

WEEDS.—It has been so unusually rainy for weeks, that it is much to be feared many crops will get into a very foul state, and it is almost needless to add, that extra efforts must be made to restore cleanliness; without which, crops can never be satisfactory. We have often before observed, that when continued rain, or a damp atmosphere, renders it extremely difficult to destroy weeds by ordinary means, the very best way, as to drill crops, is to dig them in, at least, where the drills are a foot apart; with respect to such as are much narrower, a clean hand-weeding must be practised, following with the small hoe as soon as the soil gets dry. Above all, let every one who desires to have comfort, and a prospective confidence in his plot, take special care that no weeds be allowed to run to seed; the immense benefits accruing from this persevering course will be manifest before the year is out, and will tell with tenfold force in future years, more especially if the plan be persisted in. We have little doubt that the day will arrive when our farming lands will be kept as clean as our pleasure gardens now are, and when men will look back with astonishment at the narrow-sighted policy of bygone days, when those who ought to have known better could not discern that weeds were their enemies in a double sense; for it is difficult to

say whether they do most harm in exhausting the soil or in obstructing the light.

SPARE LAND.—The time has now arrived when some early summer crops will be removed, and make way for their successors. Foremost amongst these, perhaps, stands the early potatoes; and it becomes the allotment holder to "take stock," to ascertain what will be most useful during the approaching winter. If he has a cow, or pigs, let him by all means lean to root culture, for these are invaluable, whether in the cottage, the cow-house, or the piggery. The Swede is, of all others, the most generally useful at this period, and for this purpose, as the tap-rooted plants, such as mangold, &c., will not transplant so successfully as the Swede turnip. To be sure, *some* kinds of turnip may be sown, especially if the soil be light and in very fine tilth, with a better chance of success than the Swede, if not deferred. There is the Dale's hybrid, the Yellow Bullock, &c., which, to the solidity of the Swede, add the earliness of our best old kinds.

Amongst other matters for filling up spare plots, or the intervening portions of such, let us not forget cabbage. It has before been observed, that it is a most undoubted stroke of good allotment policy to sow a patch of cabbage, of some early-hearting kind, once a month, with the exception of September, October, November, December, and January. We speak here of the ordinary garden cabbages; the Drum-head, for cattle purposes, is altogether another affair. A planting in the end of July, from an early sowing in June, will prove of much use, providing a site can be spared; they will prove nice, close-hearted stuff by the beginning of October, and will, in fact, be what a London market-gardener would term good coleworts. It may happen that the cottier's family may not need them, and, if he live near a town, he can bunch them, and send his wife, or the bairns, to market with them, where they will speedily obtain highly remunerating prices. This course of proceeding we have frequently urged, and we must continue to repeat it; for if an allotment man can produce two pounds by a marketing system where only one pound's worth could be obtained by home consumption, he is in a position to provide things needful to fill up the blank, and, it may be, lay by a few shillings into the bargain. Many other things might be suggested to fill blank patches, but space will not permit further detail in this way.

MISCELLANEOUS MATTERS.—The whole of July is the best period in all the year to get out crops of the various brocolis, autumn cauliflowers, the green kale, the cabbaging kale, Brussels sprouts, savoy, and, indeed, all other winter greens. After this month they can scarcely be recommended to the allotter, as they do not produce bulk enough to be profitable. Nevertheless, as secondary crops a good many may be introduced in the early part of August, if the soil is good, and the cultivator has no better object in view. All these things require liberal manuring, and, if manure runs short, we do not recommend any but the kale and Brussels sprouts. It is the best practice to insert them in deep drills; this keeps them cool, and enables the cultivator to earth them up with facility.

ONIONS should be clean weeded once more, and, if they are in beds, the alleys may be then dug, and planted with some of the greens.

THE VARIOUS ROOT CROPS.—If the final thinning-out has not been completed, let it be done immediately.

DISTANCE IN THE DRILL ABOUT AS FOLLOWS—

Mangold	8 to 12 inches	} Dependent on the richness of the soil. The maximum for rich soil; the minimum for poor soil.
Swedes	7 — 10 "	
Parsnips	7 — 9 "	
Large Carrots	5 — 8 "	
Kohl rabi	5 — 8 "	

When the final thinning is carried out, let the hoe be well worked through and between their stems, and, if any gaps occur, Swedes are the most eligible to fill them, and mangold, or cabbage plants the next.

LEeks AND CELERY.—Useful cottager's crops. A rich trench should be made for a few of each in the beginning of the month. Culture and distance similar.

LETUCES.—A good bed of *Ady's Cos*, or the *Bath Cos*, may be sown in the first week. These will make large autumn lettuces, and if the cottager has an in-pig sow to

come in about September, the lettuce will be very valuable; better food for the case, as part diet, cannot be. We should advise all allotment men to have a litter of pigs in the early autumn; the pigs weaned and off by the end of October; the sow will make capital bacon by the middle of February. There is always plenty of garbage stuff from allotments or cottage gardens, if well farmed, through September and October; and an extra pig or two might be obtained, if cheap, in the end of August, and sold again, if necessary, as soon as the meat runs short; a cottager may thus put an extra pound in his pocket.

THE MANURE HEAP.—There is more room for improvement, as connected with this, than in anything else. Unless this is well husbanded, it is vain to plan schemes of cropping; it is not science that is wanted so much as a "stitch in time," a little labour and attention. Ordinary soil is, in our opinion, all that the cottager wants; the heap covered with this, now and then, he scarcely needs any other fixer of the ammonia, &c. We would have him fix a day, say the last Saturday in every month, on which to apply a coating of soil all over, first rough levelling it, and every opportunity should be seized to add coarse herbage to the pulpy mass. —R. ERRINGTON.

APIARIAN'S CALENDAR—JULY.

By J. H. Payne, Esq., Author of "The Bee-keeper's Guide."

SWARMING.—Swarming, generally, has been unusually late this season, owing chiefly to the long cold spring; the only genial day, and such an one as bees choose for that purpose, was the 22nd of May: on that day I heard of several swarms, but I have scarcely heard of one in this neighbourhood since, although the bees have been clustering at the entrances of their hives for the last fortnight. It must be a very peculiar kind of day to induce a first swarm to emigrate; it must be a balmy still day, and something besides that I cannot discover, for there may be several days to all appearance alike, and upon one of these days every body's bees shall swarm, whilst not another swarm perhaps shall be heard of on any other day for some time. This late swarming will be a sad disappointment to those who are commencing bee-keeping this summer (who, indeed, are not a few); and I congratulate each one of them, for they will find in the management and observation of their bees a constant and increasing source of interest and amusement.

PREMATURE SWARMS, or the whole population of a hive leaving it, and alighting at a distance from it, in the usual manner:—this generally happens early in May, and I have heard of more of it this spring than usual; on the above-mentioned 22nd of May, I heard of several: the best plan that can be adopted in these cases is to unite the bees to another stock, if they should not join one of themselves; for if put into a hive they generally leave it or die. The cause usually arises from poverty, or the old age of the queen.

REMOVING STOCKS FROM OLD HIVES.—Notwithstanding what I have already said at page 54 of the present volume, I am still applied to by many persons, who have purchased stocks either in the autumn or spring, in common straw hives, and who are very anxious to remove them into what is better suited to their idea of a "handsome looking beehive:" now to all these applications, I can only say, as I have said already, "let the bees remain in their old hive; let them swarm, and put the swarm into the new one."

NEW VENTILATOR.—I would recommend all the readers of THE COTTAGE GARDENER that are bee keepers, and that are going to the Great Exhibition (and who is not?), to inspect, very closely, Mr. Kitchener's "ventilated passage," as he calls it (Class III. No. 5.), and two glasses of honey-comb, of the very finest quality, obtained by its means. It is a very ingenious invention, and most effectual in accomplishing the end it is intended to answer, as the glasses of honey which accompany it fully prove. In all probability a figure and description of it will be given in the pages of THE COTTAGE GARDENER before next season. I have one of them, kindly presented to me by Mr. Kitchener, which I shall use as soon as the weather permits and my bees require room, and I shall then be able to speak of its utility from my own experience.

NADIR, OR UNDER-HIVING.—I would very earnestly recommend all persons who are desirous of obtaining fine honey from their bees to avoid, even upon the most pressing emergency, this—the very worst of all bad management; for a stock of bees "nadir-hived," becomes at once almost useless: they have so much room that they will not swarm, and honey and brood are so mixed up in the hive, that its contents are almost valueless. I well remember undertaking a journey, about fifty years ago, to see an extensive apiary managed on this principle; the bees were in octagon boxes, each holding from thirty to forty pounds. The method pursued was to have a swarm in one of these boxes,—the next year to place a similar box beneath it, and the third year to place another box beneath the two already filled; and, in the autumn of this year, to take the upper box, which was three years old, the combs of which had been the receptacles for brood and pollen (much of the latter remaining in them) for three seasons, and which were in colour approaching to blackness; whereas the honey-comb we now obtain from the tops of the hives is as white, and almost as transparent, as the glass which contains it. This is certainly a considerable step in advance, but there remains, notwithstanding, much room for further improvement, for I fully agree in the opinion of an aparian friend who resides in my own neighbourhood, that the culture of the honey-bee is still quite in its infancy.

TRANSACTIONS OF THE HEN-YARD, &c.

ON COCHIN-CHINA FOWLS.

JULY.

I AM induced to speak on the subject of Cochin-China fowls, no less by the excellence of the kind, than by the extreme difficulty which I have myself experienced in procuring them pure. The descriptions of them to be met with in books upon poultry, however good as a general outline, I have found insufficient to direct the choice of any person unacquainted with their peculiarities, as they are not sufficiently minute. When the queen's Cochin-China fowls began to be talked of, I became anxious to buy some of the same kind. Being fond of fowls, I had tried the Spanish and Malay, and had found them (especially the former) come short of the character often given them for laying and other good qualities. When, therefore, I heard of the Cochin-China, I determined to have some, and my first attempt towards attaining this end, was to apply at Mr. Herring's establishment, in the New Road, to ask if he could procure me some eggs. I found that Mr. Herring did not deal in fowls, and he told me I should find *very great* difficulty in getting the sort pure. The difficulty which I have found, and the disappointments which I have met with, have often recalled his words to my memory. I bought eggs at various prices, from a shilling upwards, and fowls at a price which should have procured me the right sort; but all my early adventures ended alike—in disappointment.

One brood especially I cannot help particularizing, it was so very diversified; I wrote to a dealer in Leadenhall Market, whose name I had heard as one of celebrity, and desired him to save me a sitting of Cochin-China eggs, which I would fetch myself from his place at Chelsea, that being more convenient for me than the city. Of these eggs, nine in number, the hen broke two; the remaining seven produced five chicks. I considered this a good number, according to the usual average, and was well contented until time (and a very short time too) developed the chicks, and dispersed all my unfounded satisfaction. Two of the chickens were quite common cocks, with as much tail as usually falls to the share of a barn-door fowl; two were pretty good half-Malay chickens, one of which might, probably, have had a cross of the Cochin-China; the fifth more nearly resembled the true sort, she was fluffy in the hinder quarters, and had some other Cochin-China points about her, but she had a Dorking toe, and a tuft on her head. This brood formed one among many similar mischances, until, at length, piqued by repeated disappointments, I made a point of seeing all the Cochin-China fowls that I could hear of. After becoming well acquainted with the characteristics of the breed, I possessed myself of a few nice birds, and still continued the investigation; during which I, of course, saw a great number of good, bad, and mediocre specimens.

Among all that I have met with, I do not think I have seen one lot in five true to the kind; and among these (I suppose from degeneration), many have been deficient in one important point—size. From this, I judge that many others have been equally unlucky with myself, and it is this belief which has led to my present remarks.

I cannot help feeling astonished when I hear persons speak of crossing this magnificent breed of fowls with the Dorking, or some other kind, and am at a loss to understand why such an excellent sort should be interfered with. I suppose this singular fancy for cross-breeds may, to a great degree, account for the number of indifferent and half-bred birds often sold for the true kind, and for the extreme difficulty which is always found in getting them fine and pure. The most common of these cross breeds is the result of a mixture of the Cochín-China with the Dorking sort, which are fine, plump, weighty birds, but very inferior to the Cochín-China in most respects, and I have never met with one which has inherited the quality of good laying from the Cochín-China parent. They may be detected, generally, by the fifth toe; and I think invariably by the length and bearing of the tail, as well as by the size of the wing.

From the appearance of birds frequently purchased in the markets, and other places, a cross with the game fowl seems also to have been much resorted to of late. These make very indifferent birds, being deficient in size, as well as in other marks of the Cochín-China breed. With the Spanish they are said to form good birds for the table, but of these I cannot speak from my own knowledge, as I never had any. These fowls, *when pure*, are so excellent in every good quality, that I think they need only to be known *experimentally* to find a place in every poultry yard, where a few guineas *present* outlay can be compassed without great inconvenience. When of the true sort they are most abundant layers, early and good sitters and mothers, and lay again within a few weeks after producing chickens; they are the tamest, most tractable fowls I know, and are easily confined to the place intended for their use; a thing which is often found very difficult with the lighter and larger-winged sorts. For the table they make large, excellent birds, rather resembling the pheasant in flavour; but I believe few persons have, at present, the heart to put *many* to this use. Should nothing happen to prevent it, I will next month furnish our readers with such a minute description of their appearance, as may, I hope, prove a useful guide to many, and save them from the numerous disappointments through which I have struggled to success.

ANSTER BONN.

HISTORY OF AN APIARY.

THOSE of your readers who have followed the narrative of my last summer's bee-experiments, in respect to artificial swarming, will, I doubt not, have begun to weary, and ask for their result. This I purpose giving in this paper.

The prime-swarm of May 11th, did very well on the whole, considering that its queen was not (so far as I could conjecture) a young one. It weighed 32 lbs. 12 ozs. of contents on the 24th of July, including what might have been stored in two small glasses at its top and subsequently carried below.* While this swarm succeeded thus well, the cast which was forced on the 30th, from the old hive, turned out, as I feared, a complete failure. It reached its highest state of prosperity about the end of June, but its net weight never exceeded 9 lbs. After June it began to decline, so much so, indeed, that anticipating its end, I deemed it prudent, on the 30th of July, to break it up, after uniting its population to that of a strong swarm, which had been given to me on the 27th of June, and the weight of which did not, at the time, exceed 12 lbs. net, though otherwise both populous and strong. *This united stock was the identical one which I buried in the ground last winter.* On breaking up the cast, after the bees had been joined to their neighbours, I narrowly examined every comb, and found a good many eggs, and now and then

* Out of this hive, which was very strong in population, a swarm (also artificial) was forced on the 22nd of last month (May), according to the process explained in Ch. vii. of the *English Bee-keeper*. It was hived in one of my large hives, as many bees as possible being suffered to escape from the old hive, which, as well as the swarm, is doing well (and must have a young queen by this time), though the first twelve days of June, save the first and second, have been most unpropitious.

a little brood; but it was evident from the condition of the hive, that the bees were too few to attend to the brood sufficiently, as there were several dead grubs found in it, and young bees imperfectly developed. It was manifest, therefore, that in this, my first trial of the artificial-swarming system, I had mismanaged the process: the prime-swarm was made too early in the year (a very late season, be it remembered), and too many bees had been driven out of the old stock on the occasion of its formation.

Of this I became the more convinced when I learned the success of my friend Mr. C. in respect to his hives. His first fine swarm (artificial) of the 21st of May attained the weight of 51 lbs. of contents on the 5th of July following, in little more than six weeks' time. It was then broken up and plundered, much too early in the season, as the bees might yet have added from 10 lbs. to 20 lbs. of honey to their stores before the close of the honey season, which did not terminate here till the 5th of August. Most of the bees were saved, and returned to the hive with some portions of comb, in the vain hope that they would recover themselves before winter, but on the 21st of September they only weighed 8 lbs. clear. By feeding, however, they have contrived to live out the winter, and are gradually restoring themselves; though at the present moment (June 9) the honey-hive is only half full of comb.

On the same day that this hive was plundered, the other artificial swarm of the 21st of May had attained a net weight of 30½ lbs., and it amounted to 41 lbs. when weighed again at Michaelmas. This hive has done magnificently this spring. Not only is there an immense quantity of honey in it, but it is in the utmost vigour, after throwing off, literally, a *monster (natural)* swarm on the 30th of last month. After its issue the bees in the old hive commenced an instantaneous massacre of their drones, a tolerable indication that they have no intention of *casting*. So large was the swarm (which was housed in a set of Nutt's boxes) that the bees commenced working in *all three boxes simultaneously*. The weather, however, is sadly against us here, scarcely a drop of honey having been added to the stores of the hives for the last fortnight. The hurricane of the 8th, moreover, has, I fear, ruined my chance of obtaining surplus honey this year; I must have lost many thousand bees, which the warm weather tempted out never to return on that day. Such are amongst the drawbacks of an exposed situation!

Of my friend's two artificial casts, the one was plundered on the 21st of September, when its net contents (comb of bees) were found to weigh 15 lbs.; the other weighed 20 lbs. at the same time, it having been reserved as stock. This hive (by no means a small one, 13 inches by 11) is as full of bees as it can be, which are, moreover, at the time I write (June 13th), working diligently in three bee-glasses. It will probably swarm the first fine day, of which, however, there seems little prospect for the present. A COUNTRY CURATE.

LONDON HORTICULTURAL SOCIETY'S SHOW.

CHISWICK, JUNE 7TH.

PITCHER PLANTS.

THE grand feature of the day, both as regards novelty and singular beauty, was a large collection of Pitcher Plants, from Messrs. Veitch, of Exeter. These attracted, very deservedly, general admiration, from the nearly ten thousand visitors on that day. We noted, particularly, the following; several plants of most of them being present.

CEPHALOTUS FOLLICULARIS, with numerous pitchers.
 NEPENTHES ALBO MARGINATA.
 N. AMPULLACEA, numerous clusters of pretty tiny pitchers.
 N. DISTILLATORIA, 8 ft high, well pitched.
 N. PHYLLAMPHORA, 6 ft high, with numerous green pitchers.
 N. RAFFLESIANA, pitchers very large, 16 on one plant.
 N. SANGUINEA, large pitchers, one plant had 11 upon it.
 SARRACENIA VARIOLARIS.
 S. FLAVA, with pitchers 3 ft high.
 S. PURPUREA, in flower.
 S. DRUMMONDII.

STOVE ORCHIDS.

These were truly fine, both as regards culture and bloom. There were eleven collections, and three single specimens, containing one hundred and fifty-one plants.

ACINETA BARKERII (*Rollison*), three spikes.
 A. HUMOLDTII (*Carson*), nine spikes. (*Rollison*), four spikes.
 AERIDES AFFINE (*Blake*), two spikes. (*Veitch*), two spikes.

- A. CRISPIUM (Blake), four spikes. (Williams), four spikes. (Veitch), four spikes, a large plant.
 A. CRISPIUM RUBRUM (Blake), four spikes.
 A. ODOBATUM (Williams), 16 spikes.
 A. ODOBATUM PURPURESCENS (Williams), 12 spikes.
 A. VIRENS (Mylam), six spikes, a fine plant.
 ANGULOIA UNIFLORA (Mylam), 20 flowers, a large mass.
 A. CLOWESII (Mylam), three flowers. (Franklin), three flowers.
 ANGRÆCUM CAUDATUM, one fine spike fully expanded, one to open.
 BRASSIA CAUDATA (Veitch), several spikes.
 B. VERRUCOSA (Williams), numerous spikes. (Rollison), 11 spikes. (Carson), nine spikes.
 B. WRAYII (Franklin), five spikes. (Carson), three spikes.
 BROUGHTONIA VIOLACEA (Henderson), five spikes.
 BURLINGTONIA VENUSTA (Rollison), 10 spikes.
 CATTLEYA AGLANDIÆ (Franklin), rare, one fine flower.
 C. MOSSIÆ (Franklin), five flowers. (Rollison), 10 flowers. (Carson), six flowers.
 C. MOSSIÆ SUPERBA (Franklin), six flowers.
 C. FORBESII (Woolley), many spikes.
 C. INTERMEDIA (Kinghorn), four large spikes.
 CALANTHE VERATRIFOLIA (Kinghorn), six spikes. (Blake), 15 spikes. (Veitch), eight spikes.
 CÆLOGYNE LOWII (Mylam), two spikes, with large flowers.
 CYNOCHES EGERTONII (Mylam), two very long spikes of singular, dark-coloured flowers.
 C. CHLOROCYLON (Mylam), three large flowers.
 CYPRIPIEDUM BARBATUM (Blake), 12 flowers. (Williams), four flowers. (Veitch), 30 flowers, a very large, healthy plant. (Mylam), 20 flowers.
 DENDROBIUM DALHOUSIANUM (Mylam), one spike.
 D. DEVONIANUM (Blake), many spikes.
 D. DENSIFLORUM (Veitch), 15 spikes, a noble plant.
 D. CHRYSANTHUM (Blake), three fine spikes, a large plant.
 D. CÆRULESCENS (Kinghorn), 2 ft by 3 ft.
 D. NOBILE (Williams), 3 ft by 3 ft. (Veitch), 3 ft by 3 ft. (Green), 2 ft by 2 ft.
 D. PIERARDII LATIFOLIA, 2 long spikes, well bloomed.
 EPIDENDRUM CINNABARINUM (Blake), four spikes.
 E. CRASSIFOLIUM (Franklin), nine spikes. (Woolley), 12 spikes. (Green), 20 spikes.
 E. VITELINUM (Franklin), two spikes of bright scarlet flowers.
 E. MACROCHYLUM (Green), four spikes. (Iverson), five spikes.
 E. PHOENICEUM (Carson), one spike of eight handsome dark flowers.
 MILTONIA SPECTABILIS (Rollison), a large mass, 2 ft across, well bloomed.
 ODONTOGLOSSUM CITROSUM (Mylam), the finest orchid in the exhibition, eight spikes of large, beautifully tinted flowers, very fragrant.
 O. NIVEUM (Mylam), white flowers with black spots, new and pretty.
 ONCIDIUM AMPLIATUM (Blake), two spikes, much branched.
 O. AMPLIATUM MAJOR (Kinghorn), three spikes, much branched.
 O. ALTISSIMUM (Iverson), large mass.
 O. GUTTATUM (Iverson), extra fine, three spikes, 5 ft long.
 O. PAPILO (Blake), five large flowers.
 O. CRISPUM (Mylam), one spike, with several branches.
 O. PULCHELLUM (Franklin), two spikes of lovely flowers.
 O. PULVINATUM (Franklin), a spike of flowers 7 ft long and thickly bloomed.
 O. SPHACELATUM (Rollison), a large plant, with numerous drooping flower stems.
 PERISTERIA ELATA, the tall Dove Plant (Woolley), four spikes, well bloomed.
 PHALÆNOPSIS AMABILIS (Blake), three long spikes.
 P. GRANDIFLORUM (Blake), the best in the exhibition, numerous flower stems, trained balloon wise, and covered with pure white flowers. (Mylam), a long spike with seven branches, finely bloomed. (Veitch), small. (Kinghorn), one spike, with 21 flowers, the same as was shown in May, and still quite fresh. (Rollison), seven flowers.
 SACCOLABIUM AMPULLACEA (Mylam), very rare, seven spikes of rose-coloured flowers.
 S. GUTTATUM (Williams), two spikes. (Blake), five spikes.
 S. PRÆMORSUM VARIUM, 11 spikes, extra fine.
 SOBRALIA MACRANTHA (Veitch), 10 large flowers, extra fine. (Franklin), seven flowers. (Woolley), four flowers.
 S. GALLOTTII (Rollison), three flowers.
 STANHOPEA OCLATA (Franklin), short of bloom.
 S. TIGRINA (Rollison), three flowers. (Cole), two flowers.
 TRICHOPELIA TORTILIS (Franklin), 15 flowers.
 VANDA SUAVIS (Mylam), three fine spikes, 15 flowers.
 V. TRICOLOR (Franklin), seven flowers. (Iverson), two spikes and few flowers.
 V. TERES (Blake), 5 ft high, one spike.

PRIZES FOR COLLECTIONS OF ORCHIDS.

TWENTY.—First prize, Mr. Mylam. Second prize, Mr. Blake. Third prize, Mr. Franklin. Fourth prize, Mr. Williams. FIFTEEN.—First prize, Messrs. Veitch. Second prize, Messrs. Rollison and Sons. TEN.—First prize, Mr. Carson. Second prize, Mr. Woolley. SIX.—First prize, Mr. Kinghorn. Second prize, Mr. Iverson. Third prize, Mr. Green. FOR SINGLE SPECIMENS.—Only one was awarded, and that to Mr. Cole, gardener to C. B. Warner Esq., for DENDROBIUM CALCEOLARE.

MISCELLANEOUS COLLECTIONS OF STOVE AND GREENHOUSE PLANTS.

These were, if possible, shown in better condition than in May, especially the magnificent plants from Mrs. Lawrence of Ealing Park. The plants were not only generally good,

but remarkable, amongst so many, for the absence of any ill-managed or badly-flowered ones. There were fifteen collections, containing the large number of one hundred and ninety-five plants.

- ACROPHYLLUM VENOSUM (Hamp), 1½ ft by 1½ ft.
 ADENANDRA FRAGRANS (Green), 2½ ft by 2½ ft.
 ALLAMANDA CATHARTICA (Taylor), 4 ft by 3 ft. (Carson), well bloomed.
 A. GRANDIFLORA (Green), trained and well flowered.
 AOTUS LINOPHYLLA (Stuart), 4 ft by 3½ ft, a graceful plant.
 APHELEXIS MACRANTHA PURPUREA (Green), 3 ft by 1½ ft. (Stanley), 1½ ft by 1½ ft. (Hamp), 2½ ft by 2½ ft. (Stuart), 2 ft by 2 ft. (May), 5 ft by 5 ft. (Cole), 3½ ft by 3 ft.
 A. HUMILIS (Kinghorn), 3 ft by 2½ ft. (Croxford), 2½ ft by 2 ft.
 A. SPECTABILIS GRANDIFLORA (Taylor), 2½ ft by 2 ft.
 A. SPLENDENS (Williams), 2½ ft by 2 ft, finely bloomed.
 AZALEA INDICA ALBA (Stanley), 2½ ft by 2 ft.
 A. GLEDSTANESII and LATEBITIA (Kinghorn), grafted on one plant, 3 ft by 3 ft, admirably bloomed. (Cole), 5 ft by 4 ft, well bloomed.
 A. VARIEGATA (Frazer), 3 ft by 3 ft, finely bloomed. (May), 3 ft by 4 ft, in fine order. (Carson), a standard, 6 ft by 2½ ft.
 A. MAGNIFICA (May), 4 ft by 4 ft, splendid.
 A. FULGENS (Williams), 3 ft by 2½ ft.
 A. FORMOSA ELEGANS (Taylor), 3 ft by 3 ft.
 BORONIA ANEMONÆFOLIA (Carson), 2 ft by 2½ ft.
 B. SERRULATA (Green), 2½ ft by 2½ ft, a fine specimen. (Williams), 2 ft by 2 ft. (May), 2½ ft by 2½ ft.
 B. PINNATA (Taylor), 2½ ft by 2 ft, finely flowered.
 CHIRONIA GLUTINOSA (Stanley), 2 ft by 1½ ft, a neat plant, but scarcely bloomed. (Speed), 2 ft by 2 ft, well bloomed.
 CHOROZEMA VARIUM NANUM (Frazer), 3 ft by 2 ft. (Carson), 2 ft by 2 ft. (Croxford), 2 ft by 2 ft. (Green), 3 ft by 2½ ft.
 C. HENCHMANNII (May), 4 ft by 4 ft.
 CROWEA SALIGNA (Croxford), 3 ft by 2 ft, scarcely in bloom.
 CYTODERAS REFLEXUM (Speed), 2 ft by 2 ft.
 COLEONEMA RUBRA (Speed), 2½ ft by 2½ ft. (Hamp), 2½ ft by 2½ ft.
 CLEODENDRON FALLAX (Speed), 3 ft by 3 ft, admirably bloomed.
 C. KIEMPERII (Frazer), 2½ ft by 3 ft, two large spikes.
 DIPLANDIA CRASSINODA (Speed), 4 ft by 3 ft, 15 flowers expanded. (Carson), 4 ft by 3 ft, well bloomed. (May), 4 ft by 2½ ft. These were all beautifully grown plants.
 D. SPLENDENS (Cole), 5 ft by 3 ft, a fine specimen.
 ERICA BERGIANA (Pamplin), 2½ ft by 1½ ft, densely bloomed.
 E. CAVENDISHII (Green), 2½ ft by 2½ ft. (Taylor), 3 ft by 2½ ft. (Frazer), 2½ ft by 2 ft. (Croxford), 3 ft by 2½ ft.
 E. PERSPICUA NANA (Frazer), admirably bloomed, 2½ ft by 3 ft. (Kinghorn), 2½ ft by 2 ft, densely flowered. (Stanley), a neat plant, 1½ ft by 1½ ft. (Speed), 2½ ft by 2½ ft.
 E. TRICOLOR DUMOSA (Green), 2½ ft by 2½ ft.
 E. DEPRESSA (Stuart), 2 ft by 1½ ft.
 E. TRICOLOR RUBRA (May), 4 ft by 4 ft, a dense bush.
 E. TRICOLOR ELEGANS (Cole), 3 ft by 3 ft.
 E. TRICOLOR WILSONII (Green), 2½ ft by 2 ft, well bloomed.
 E. VENTRICOSA COCCINEA MINOR (Speed), 2 ft by 2 ft, densely bloomed. (Williams), 2 ft by 2 ft.
 EPACRIS MINIATA (Kinghorn), 2 ft by 2 ft. (Pamplin), 1½ ft by 1½ ft. (Croxford), 2½ ft by 3 ft.
 E. GRANDIFLORA (Cole), 5 ft by 5 ft. (Croxford), 3 ft by 3 ft. (Frazer), 5 ft by 6 ft. (Stanley), 2½ ft by 2 ft.
 ERIOSTEMON BUXIFOLIUM (Pamplin), past its best. (Cole), 2½ ft by 2½ ft.
 EUTAXIA MYRTIFOLIA (Pamplin), 1½ ft by 2 ft.
 FRANCISCA ACUMINATA (Carson), 3 ft by 2½ ft.
 GARDENIA FORTUNII (Carson), 5 ft by 4 ft, admirably bloomed.
 GOMPHOLOBIUM POLYMRPHUM, trained low.
 HOYA CARNOSEA (Watson), 3½ ft by 2½ ft, well bloomed.
 HIBBERTIA CUNNINGHAMII (Frazer), 2½ ft by 2 ft, covered with its pretty flowers.
 IXORA COCCINEA (Frazer), 3 ft by 2½ ft, well bloomed. (Cole), 3 ft by 3 ft. (May), 2½ ft by 2 ft. (Carson), 3 ft by 2½ ft.
 I. CROCATI (Taylor), 2 ft by 2 ft.
 JUSTICIA CAERNEA SUPERBA (Watson), 2½ ft by 2 ft.
 LESCHENAUTIA FORMOSA (Green), 2½ ft by 3 ft, highly coloured. (Stanley), 1½ ft by 1½ ft. (Cole), 2½ ft by 3 ft, extra fine. (Carson), 1½ ft by 2½ ft.
 L. BILOBA MAJOR (Green), 2 ft by 2 ft. (May), 2½ ft by 2½ ft, beautifully and densely flowered. (Frazer), 2 ft by 2 ft. (Kinghorn), 2 ft by 3 ft.
 L. BILOBA GRANDIFLORA, 3½ ft by 2½ ft.
 PIMELEA DECUSSATA (Watson), 3 ft by 2½ ft. (Hamp), 3 ft by 2½ ft. (May), 3 ft by 3 ft. (Cole), 3 ft by 5 ft. (Kinghorn), 3 ft by 3 ft, very fresh.
 P. HENDERSONII (Croxford), 3 ft. by 2½ ft. (Cole), 2½ ft by 3 ft. (Stewart), 3½ ft by 2½ ft. (Frazer), 2½ ft by 2 ft. (Taylor), 2 ft by 2 ft. (May), 4 ft by 3 ft, very fine.
 P. MIRABILIS (Frazer), 3 ft by 3 ft, in good order.
 P. LANATA (Pamplin), 2 ft by 2½ ft.
 P. SPECTABILIS (May), 6 ft by 9 ft, an extraordinary fine plant, densely flowered.
 POLYGALA ACUMINATA (May), 6 ft by 8 ft, extra fine. (Cole), 3 ft by 4 ft. (Frazer), 4 ft by 4 ft. (Carson), 4 ft by 4 ft.
 P. DALMAISIANA (May), 3 ft by 3 ft, densely bloomed. (Stuart), 3 ft by 2½ ft. (Watson), 3 ft by 2½ ft.
 P. CORDATA (Cole), 3 ft by 5 ft, well bloomed. (Hemp), 2 ft 2 ft by 2 ft, a neat plant.
 P. OPOSITIFOLIA (Taylor), 3 ft by 3 ft. (Williams), 3 ft by 2½ ft.
 RONDELETIA SPECIOSA (Green), 3 ft by 2 ft. (Cole), 3 ft by 2½ ft.
 RHYZOSPERMUM JASMINOIDES (Frazer), 6 ft by 3 ft, a well grown plant, but deficient in bloom. (Pamplin), a low bush.
 STEPHANOTIS FLORIBUNDA (Taylor), 5 ft by 3 ft, richly bloomed. (Green), 5 ft by 4 ft, well grown. (Cole), 6 ft by 3 ft, many blooms.

(*Croxford*), 5 ft by 2½ ft. (*Carson*), 5 ft by 3 ft. (*Speed*), 5 ft by 3 ft. (*Stanley*), small.
SPHENOTOMA GRACILE (*Taylor*), 2 ft by 2 ft. (*Carson*), 2½ ft by 2 ft. (*Cole*), 2½ ft by 2 ft.
TETRATHECA VERTICILLATA (*Watson*), 2 ft by 2 ft. (*Speed*), 2½ ft by 2½ ft.
VINCA OCELLATA (*Speed*), 2 ft by 3 ft.
V. ROSEA ALBA (*Stanley*), 2 ft by 2 ft.
ZYCHIA INOPHYLLA (*Stanley*), 3 ft by 2 ft, nicely trained.

IN COLLECTIONS OF TWENTY.—First prize, Mr. *May*, gardener to Mrs. Lawrence, of Ealing Park. Second prize, Mr. *Cole*, gardener to H. Colleyer, Esq. Third prize, Mr. *Frazer*, nurseryman, Lea Bridge. Fourth prize, Mr. *Stanley*, gardener to H. Berens, Esq., Sidecup, Kent. Fifth prize, Mr. *Pamplin*, Lea Bridge-road.

IN COLLECTIONS OF FIFTEEN.—First prize, Mr. *Green*. Second prize, Mr. *Carson*. Third prize, Mr. *Taylor*, gardener to J. Castor, Esq., Streatham.

IN COLLECTIONS OF TEN.—First prize, Mr. *Speed*, of Edmonton. Second prize, Mr. *Croxford*, gardener to H. Barnes, Esq., of Stamford Hill.

IN COLLECTIONS OF SIX.—First prize, Mr. *Kinghorn*. Second prize, Mr. *Watson*, gardener to Mrs. Tredwell. Third prize, Mr. *Hamp*, gardener to J. Thorne, Esq. Fourth prize, Mr. *Stuart*, gardener to T. Huggins, Esq., of Norwood. Fifth prize, Mr. *Williams*.

(To be continued.)

THE DOMESTIC PIGEON.

THE DISEASES OF PIGEONS.

(Continued from page 341, vol. v.)

LAYING SOFT EGGS.—To lay eggs without shells, soft, and merely covered with a simple membrane, more or less rough, is a disease of the hen, either constitutional or accidental; if the first, it is incurable, but if the second, it may easily be cured. When it is constitutional, it is doubtless produced by a defect of conformation in the organ which should secrete the calcareous matter, or chalk, of which the hard part of the shell is formed; in this case, we shall perceive the disease at the first laying; be certain of it at the second; and abandon the female before the third, after having previously submitted her to the proper treatment, provided she is worth the trouble.

When a female lays soft eggs, and is not in the habit of doing so, we shall most frequently find that it proceeds from over laying. If her eggs have been taken from her twice following, and her male being too ardent, has, by pursuing her to the nest, not allowed her sufficient interval between each brood, it is almost certain that the third time her eggs will be soft. We must, therefore, allow her to set, by cleverly substituting the eggs of other pigeons, or even false eggs, if we have no other. If this evil should reappear the next laying, we must uncouple her, and place her alone in a separate breeding-cage, and keep her there rather more than a month, feeding her with nothing but barley, and giving her pure water to drink; after this we might couple her again. Should the complaint continue, we must expect nothing more from her.

APOPLEXY kills a pigeon in an instant, if an immediate remedy is not applied, and yet the means hitherto employed very rarely succeed. Apoplexy, or a violent rush of the blood to the head, is generally the consequence of excitement, added to stimulating food, such as canary or hemp seed. The pigeon attacked with it, falls suddenly to the ground, struggles for some moments, strongly convulsed, whilst the blood proceeds from the beak, and dies at the expiration of an hour or two. If it is perceived at the moment when the attack commences, it should be bled, by cutting two of its nails, one on each foot, near enough to the claw that a good deal of blood may flow; its feet should then be plunged into lukewarm water, to increase the flowing of the blood, and be kept in until the animal begins to return to life. When it no longer shows any sign of inflammation in its organs, it is placed in a breeding-cage, where it must be kept to a strict diet until entirely recovered. This dangerous disease particularly attacks those pigeons which have two hens, or are unfaithful to their own; very few escape it.

PALPITATIONS, to which pigeons are so subject when frightened that we may hear the violent beating of their

heart, sometimes occasions sudden death, by the effusion of blood within, when an artery or any other bleeding-vessel gives way. The only means of preventing this accident, otherwise very rare, is to keep them as quiet as possible.

INDIGESTION among pigeons is very often the consequence of a long and forced abstinence; for then, as soon as they have any quantity of grain given them, they devour it greedily, and swallow such a quantity that, not being able to digest it, it remains in the esophagus, or crop, becomes fermented and corrupted, and endangers the life of the animal.

Two means are employed to cure this disease. The first consists in treating them like the Pouters affected with a paralysis of the crop (see page 70, vol. v.). When it is suspended in the bag it is made to swallow a little garlic, to stimulate the muscles of the stomach, and the only food given it is a little water occasionally. If at the expiration of two or three days this means does not succeed, the following operation must be resorted to—a part of the crop, a little above the side, must first be made bare, by pulling out some feathers carefully, so as not to tear the skin; then a pair of fine scissors, that cut well, must be taken, or, what is still better, an incision knife, or a very sharp penknife, and a longitudinal incision is made, about an inch long, taking care to penetrate with one stroke the skin and the membrane of the esophagus. This accomplished, the whole of the grain is taken out, the interior is cleaned and well washed with lukewarm-water, in which is mixed a little wine, the opening is then sown up with white silk; the stitches are taken so as to catch the skin and the membrane over and under, and crossing them, like lacing a pair of stays. When the operation is finished, and the lips of the wound are well closed, they must be greased with a little olive-oil, and the wound left to unite by keeping the sick bird on the most rigorous diet. We have frequently seen this operation practised with success; still, it is not recommended to an unpractised hand, except in those cases when other means have proved ineffectual. In both cases the bird is dieted for some considerable time; some boiled fish is given it to pick, and it is made to drink water, with some nitre or alum dissolved in it.

THE CHANCRE is, of all diseases to which Pigeons are subject, the most terrible, by the ravages it makes in a dove-house, where it spreads with the greatest rapidity, if those affected with it are not immediately removed. No complaint is more contagious, or requires so much precaution. As soon as a bird is attacked we should take it away, and clean its nest most scrupulously. The chancre may be produced by several causes, but it is most commonly caused by a bad or false moulting. As soon as we perceive a bird affected with it, we should prevent its having any communication with the others. Open the beak, and remove all the yellow mucus found in the throat with a kind of brush made of lint, soaked in water and vinegar. If any ulcerations are perceived that can be reached, they should be burnt away by passing some caustic over it once, or, perhaps, several times, and the cure will be certain if there are no more there; but, unfortunately, the most important ulcers cannot be perceived, from their being so low in the throat. There is but one remedy for this, which is to administer the receipt published in 1818, by Messrs. Parmenter and Boiste, and which we will extract in the author's own words: "Here is, they say, a receipt that we are assured has been employed successfully by a proprietor who had in his dovecote a certain number of Pigeons attacked with the complaint known by the name of the Chancre, and which he obtained from a man who had for a long time made a secret of it. Cummin, oil of sorrel, oil of lavender, essence of spoonwort, the whole in nearly equal quantities. Night and morning he took one of the wing feathers of a pigeon, dipped it in the mixture, and then put it in the throat of the pigeon. Out of five individuals treated in this manner two are dead, three are cured, with the exception of one only which has not recovered its voice. We must observe, also, that the disease had already made great progress with those pigeons which could not resist this remedy, the effect of which appeared to be to make them expectorate four or five days a very thick sharp humour. At the expiration of this treatment he puts a small quantity of nitre in the water he gives them. If any of the oily mixture penetrates into their windpipe, it kills them almost instantly." If we perceive

that this remedy acts in an efficacious manner, and when we are quite sure that it is perfectly cured, it may be taken back to the breeding cage and coupled, but it should not be put into the dovecote until after laying, and when no symptoms of this complaint any longer appear. The chancre seems to be a pulmonary consumption.

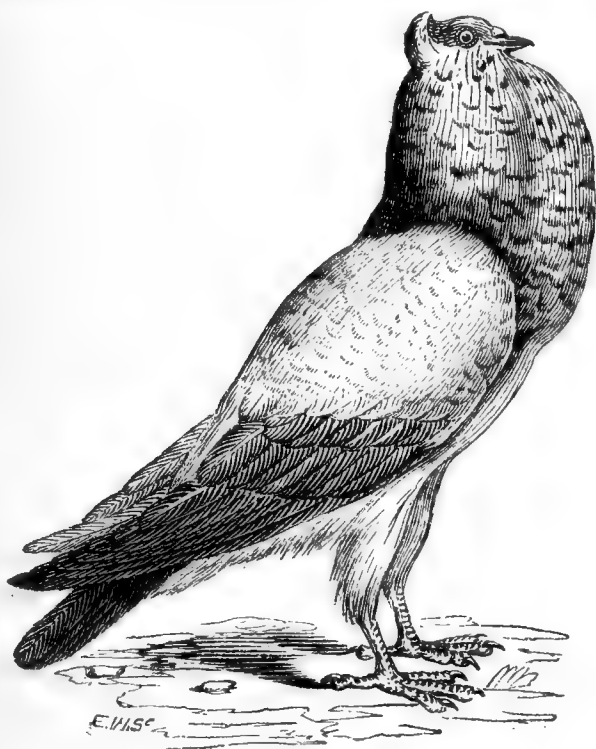
(To be continued.)

DESCRIPTIONS OF PIGEONS.

EIGHTH RACE.

CAVALIER PIGEON (*Columba eques*).—This race is commendable for its beauty, and still more so for its fecundity. They appear to be a cross between the Romans and the Pouters, whose general forms they assume, and also have the faculty of swelling their crop, more or less, according to the variety. Some have thick nostrils, membraneous, and fleshy, or even with a small mushroom, but this is rarely the case; they have a red filament round the eyes.

COMMON CAVALIER PIGEON (*Columba eques communis*). The Horseman Pigeon.—Albin pretends that this bird is of a better stock than the others; he says it has the talent of enticing other pigeons into its dove-house, and that the London merchants profit by it in the following manner—"They take the male as soon as the young are hatched, and carrying it into a dove-house, they let it fly:—after making several turns from one side to the other, he will bring some pigeons with him, or meeting them on his way, he will try to do so." This talent that Albin boasts so much of in the Cavalier, belongs to all pigeons. It is said that this bird sprung from the Pouter and the Roman, for it has the faculty of swelling its crop, like the first, and it has on its nostrils thick membranes, like the second; it is high on its legs, and long; it has a border round the eye, and a black iris; its wings are long and crossed, and it has a very great space between the extremities of the wings; its colour is commonly white; it is very productive, and flies well.



PROUD CAVALIER PIGEON (*Columba eques arrogans*), crossed from the common Bagdad Pigeon and the common Cavalier. It is not so long as the last; of a beautiful figure; a membrane on the beak; and a small ribbon round the eyes; iris black; throat rises in the shape of a cylinder, from the stomach to the beak; high on its legs; plumage generally white; it produces freely, and flies well.

SPANISH CAVALIER PIGEON (*Columba eques Hispana*).—We think we ought to mention this variety here, described by Buffon, although we have never seen it. This author says that the Spanish pigeon is as large as a pullet, and very handsome; it differs from the Bagdad, not having any mushroom above the beak, the second fleshy eyelid not projecting so much, and having a strait beak, whereas the

other is curved. It is crossed, adds the naturalist, with the Bagdad, and the produce is a very large pigeon. M. Vieillot adds to the article, copied from Buffon, that "this race is little known, and not very fruitful."

(To be Continued.)

HAY-MAKING.

HAVING paid some attention to the process of hay-making, and pursuing a different system to the one proposed in your valuable publication, in the 30th of May number, I venture to forward the particulars of that which I adopt, believing it to be the most expeditious as well as the most economical. It is the custom in the Midland Counties for the hay-makers to provide themselves with a fork and rake; the master supplying the drag rake, if such be used.

I generally employ six hay-makers to the acre, and commence the morning after the grass was mown, preferring that the grass and ground should be in some measure dried and warmed before the first operation, though if the weather be very warm and propitious, I would begin with a smaller number of hands on the day of its being mowed. I commence with the first mowed grass, which I have well shaken out of the swath into a ridge, over the vacant space between the swaths, with the hands, and not the fork, until the whole field has been thus treated. I greatly object to the process of tedding, because the damp arising from the ground underneath is attached to the grass above; and as the grass lies on the ground with a smooth surface the wind blows over and not through it, as it does when ridged, consequently it dries more slowly; besides which it is bleached more in the ted than in any other state. But when the grass is elevated into ridges by the rake the ground is cleared between them, and the moisture is evaporating from the exposed ground, which, at the same time, becomes warmed and dried by the sun.

If the weather be fine and promising, the whole proceedings of the day is a succession of turning by means of the rake, the bottom of the ridges to the top, pulling the ridge from its present situation upon the dry space adjoining, beginning where the grass was first shaken out. By raking the ridges one way one time, and back another, it is not moved away from its original locality, and yet always obtains a warm and dry position upon such removal. By this operation the grass is turned three times oftener than it can be by any other, and it has by this treatment been ready for carrying by the same evening; and if so, I dispense with twenty or twenty-four of the haymakers, as I may judge expedient. If the weather be promising, without any prospect of rain, I leave it in this state through the night. In the morning, when the damp is dried off, the hay is made into cocks before the waggon on either side for carrying. Believing that there is much truth in the old adage "make hay whilst the sunshines," I generally employ six or more haymakers to the acre; and as there is always a greater probability of two fine days in succession than three, and of three than four, it is preferable to have thirty people one day than ten three days successively.

If the weather be unpromising, I adopt a different system to the foregoing. If showery, I have the swaths hacked over with the rake from time to time to prevent the grass from becoming yellow, and to allow the moisture to evaporate. When the weather will admit of its being shaken into ridges, the same routine is pursued as before described; yet, if there be any threatening of rain, I have the grass drawn out of the ridges with the rake into little cocks, not so large as a bushel, the less the better whilst full of moisture and in the grassy state; and my plan is, in showery weather, to keep it in cocks until it is in a condition for carrying. During the intervals of fine weather I have the cocks turned and shaken, adding two into one as its condition will admit. Should the hay have been put into moderate cocks for security during the night, and require a little drying before being in order for loading, I have the larger cocks shaken out and put into smaller, rather than spread out into windrow, to which I object as much as to tedding, for these reasons: in small or moderate sized cocks the hay dries faster, keeps the colour better, has not the opportunity of absorbing so much moisture from the ground, and is much less injured in the event of unexpected rain.

I beg to remark further, that I much object to a round stack, in which there is so much deterioration of hay; first, by the successive exposure to the wind and rain, after each round of cuttings; and, secondly, by the eave droppings which descend from the whole circle of the stack soaking into the cut surface. Whereas, if made into a long stack, however small the quantity, and only one end being cut, there is perfect exemption from eave droppings, and the hay is consumed before it has been subjected to long exposure. I would also observe that I top my stack with straw, as I consider that the hay which forms the roof becomes dry and flavourless, and is injured by the steam being condensed upon it.

RUTLAND.

TAYLOR'S HIVES.

MAY I ask the favour of space to say a word or two on the remarks made by a "Country Curate," in his recent publication, as to some of the bee-hives described by me in the *Bee-keeper's Manual*. The author observes, "if the truth were known, many a complaint has arisen, and will yet arise, against even Mr. Taylor's hives of wood. It stands to reason that wooden boxes, unprotected by a beehed, are both too cold in winter, and too hot in summer, for an exposed situation." If the Country Curate will be kind enough to turn to page 42 (4th edition), he will find that I have recommended, as a general rule, wooden hives "to be placed under some cover or shed, as a protection from wet and a hot sun." Elsewhere I have directed shading and covering. I apprehend the remark is not intended to apply to what I have called the "Amateur's double bar-hive," this being incased throughout. The "Single bar-hive" was made to meet the objections raised by a few friends to what seemed to them the unnecessary trouble of having to remove the outer cases to the boxes, previous to occasional inspection. To me the objection carries no weight with it; but I can hardly be censured for yielding to the solicitation of those who wished for hives made without outside covers, the wood being additionally thick, as described at page 55. Of these boxes I remark, "those who prefer the shelter of a bee-house can, of course, dispense with the stand and roof." It is an affair altogether optional with the proprietor to place them where he pleases. The practice of locating bee-stocks in the open air extensively prevails in many districts; and it was not long ago that the very questionable advice was given by a correspondent of the COTTAGE GARDENER to an inquirer, not to erect a house or shed for his hives: *why*, we were not informed, for the matter to me is one entirely dependent on the purse. Among amateur bee-keepers, we must recollect, it not unfrequently happens that situation, or other circumstances, interpose obstacles in the way of keeping more than one or two stocks, when a regular apiary is not thought of. In these cases, my hives may often serve as a useful substitute.

I may further just refer to the "Country Curate's" remarks on my plan of winter screens for bee-hives. When our apiarian friends have convinced themselves by experiment that confinement in stagnant air, damp, mildew, foul stench, and dysentery, are not good things for bees, they will probably be induced to retain them at all seasons above ground. To such I would say, that nothing more is needed in winter than some mode of warding off the effects of the sun-gleams from the entrance to the hives. Our author talks of our *ignorance* on this head. Now this is very easily dispelled by the trial of a month, at a moderate outlay; nor should I have said what I have done without some kind of warrant, if the successful experience of eighteen or twenty years is deemed sufficient. It becomes necessary, however, to caution your readers against following the advice of the "Country Curate," when he suggests a screen made by "a double line, stretched on poles, and covered with bass matting, to protect several hives at once." In the first place, such a screen would often stand a poor chance on a windy day; and otherwise would be merely mischievous. In placing a screen before each *separate* hive, care should be taken to let it be so fixed (supposing south to be the aspect), that the greater portion of it is on the western side, from which quarter the winter rays of the sun proceed. The outer temperature being favourable, the bees will always sally forth, in the

middle of the day, at the promptings of nature, returning immediately to the hive with great sagacity, chiefly on the eastern side, where the screen interposes little or no obstacle to their flight. Now a continuous line of screen would defeat the main object; for the tenants of several hives would become intermixed behind their barricade, and those that found their way over or round it, would, in all probability, never return.

HENRY TAYLOR.

NOTES OF A VISIT TO MACROOM, IN THE COUNTY OF CORK.

A FEW days since I was obliged to make a journey to the western part of the county of Cork, and it being a district but little known, I apprehend, to the readers of THE COTTAGE GARDENER, this notice of the plants I remarked in one day's stroll, over the wild hills and bogs of that country, may prove interesting.

The mildness of the climate is such, that many plants seen ordinarily but in greenhouses, flourish all the year round in the open air. *Myrtles*, *Geraniums*, and many similar ornaments of our more northerly conservatories live the winter through without protection from the severest weather. *Rhododendrons*, *Azaleas*, and other American plants flourish, as if spontaneously, in the loose peaty soil. Unfortunately, a very few only of the gentry devote much care or attention to the cultivation of garden flowers. The wants of a poor and unemployed peasantry engross, with justice, their first attention. The principal source of income to the farmers, is from the supplying of butter to the Cork Market, which the rich pasture lands yield abundantly. Along the road from Cork to Macroom I passed many a cart piled with butter-firkins; and I may remark, that except in the roofless farm houses which I occasionally noticed, I did not see those indications of poverty we are accustomed to associate with the "wild Irish." The country people were, for the most part, well clad, and beggars were not numerous. It may be that the poor had emigrated, or, it may be, they were shut up in workhouses; I only say I did not see them. Poverty is a very relative term; and, perhaps, a Lincolnshire farmer would consider himself a poor man in circumstances that would indicate wealth to a farmer of the county I speak of. But I know this portion of the county of Cork, poor as I believe it is, may be contrasted favourably with other parts of Ireland; and, at all events, your columns are not intended for a discussion on the poor laws.

The very first wild plant I remarked in walking across a marshy field, was the beautiful *Pinguicula grandiflora*. This lovely flower is found wild only, I believe, in the west of the county of Cork, and it would well repay a botanist the journey from home to visit this gem of our native plants in its only *habitat*. I remarked it in many places; and even when not in flower, it is at once recognised by its pale, fleshy leaves spreading close to the ground, generally on a little elevated hillock of soil, which it appears to have formed for itself, the better to display its brilliant purple blossoms. From the centre of the leaves arise from one to three, or sometimes four stems, about five or six inches long, each bearing a single blossom, which your readers, who may never have seen the plant, may resemble to a dwarf *Gloxinia*. A bribe of a penny a plant to a country lad procured me a basketful of plants, which I hope will grow in the mild atmosphere of a garden frame, and I shall be very happy to exchange plants with any of your readers, for specimens of the rarer British alpine or orchids, and for that purpose I enclose my address.

The next plant which attracted my notice, was the well known London-pride (*Saxifraga umbrosa*), covering the rocks in all directions, and now in full bloom. Its favourite locality appeared to be the fissures of rocks, from whence it extended its trailing branches for a considerable distance around. Close by this, and contrasting well its blue-bells with the pink flowers of the London-pride, grew in great profusion the *Scilla nutans*. This pretty flower, not very common, I had never seen in such luxuriance, nor its colour so bright a blue.

A rare plant, though not attractive, save to a botanist, the *Euphorbia hibernica*, was very abundant. It grows in woods, and also in pastures, and forms a large clump of yellowish

green stems, about two feet high, clothed with leaves of the same colour, and each stem surmounted by an umbel of blossom of a yet paler shade of green.

The sundew (*Drosera anglica*) was not very abundant. The arrowgrass (*Triglochin palustre*), I remarked in flower. The beautiful, though common *Veronica officinalis*, formed a conspicuous feature on the rocky ground, while *Athyrium filix femina*, *Aspidium dilatatum*, and *spinulosa* grew on every shady bank. It poured a torrent of rain during the greater portion of the day, or I might, no doubt, have extended my list considerably. W.

[We shall be glad of a continuance of such notes, and quite as obliged by an enumeration of the plants usually grown under glass, but which you see in the open air in southern Ireland, stating where, and the aspect.—Ed. C. G.]

SCRAPS FROM MY NOTE-BOOK.

ALPINE STRAWBERRY.—Having raised some seedlings of the white one four years ago, they were carefully planted by myself the following year, and from that time to this, have blossomed and borne fruit plentifully, but not a single runner has been forced to any root. I noticed this about the middle of the first summer, and looked *carefully* through the whole bed, and have done the same each summer since. I knew nothing of the plant before, and no one could tell me whether it was a peculiarity belonging to this sort. Having, however, lately noticed directions given for the runners of this kind to be cut off, the matter was decided. The plants have appeared to flourish, and have looked as healthy as possible from the first. I am trying to increase the size this year by rich cultivation.

[White Alpine Strawberries produce runners, although very scantily and uncertainly. They are best raised from seed, and the old bed broken up after bearing two years. A bed will continue for many years to sustain itself in plants by self-sown seeds and runners, but the crop diminishes both in size and quantity. Ed. C. G.]

CACTUS.—For the last ten years, we have never allowed the soil to get *quite dry* at any time of the year, and the leaves have, in consequence, never shrivelled. The plants have grown very fast, and have a very healthy appearance. Our greenhouse is, however, a very dry one. Last year, a plant of *Speciosissimus* had twenty-nine flowers blowing at once, and had from one hundred and twenty to thirty upon it in all. I know, perhaps, too little of these plants to compare our own with those of others when in flower, not having seen many at that time; but in size, I can safely say, ours are fully equal to any I have seen. We tried the plan, at first, as an experiment. During the growing season, we use liquid-manure three times a week, and water thrice a day in dry weather.

CAMPANULA PYRAMIDALIS.—Having removed some rooted cuttings of it from the hotbed, a short time after doing so, I found a good-sized leaf growing by itself in the bed, with six or eight short roots, half-an-inch long, attached to the heel, which had been torn off with it. The leaf was planted again, but not being able afterwards to attend to it, it withered and died.

COMMON WHITE GARDEN ROSE.—I have inquired at different times for a pink one like it, but could not hear of one. The White Rose grows luxuriantly in our garden, but no pink one yet tried has equalled it in size and number of flowers. We are too far north for any but very hardy sorts. Will some rose-fancier give the name of the pink one, if there is one, and I shall feel obliged.

[If you manured more liberally, and mulched in summer, we think the common Provence and Damask Roses would equal your wish.—Ed. C. G.]

BOX EDGING.—Mr. Beaton has lately mentioned that it may be increased by slips, and we have a border now growing vigorously that has been planted from slips this spring. It was, in part, an experiment, which, contrary to our gardener's opinion, I felt pretty sure would succeed, from having once reared some plants of it from a slip sent by a friend as a relict of Abbotsford; though some days before being planted, each slip from this small one grew and flourished.

[No one need fear to adopt any *practice* recommended by our departmental writers, for then they only teach and

advise from experience. Their opinions and their theories, like those of other men, may not be infallible; but what they teach as facts, need never be suspected.—Ed. C. G.]

DAHLIAS.—Has it ever been tried whether slips can be kept in a pot of soil through the winter, in the same way as slips of Scarlet Geraniums? Slips of Chrysanthemums may be so kept.

YELLOW ROCKET.—A short time ago, an inquiry was made about this plant, and should the writer not have met with one, a slip or two of a plant known by that name here, shall, with pleasure, be sent by post, if the editor will take charge of it, or give the address. Our plant grows, when well-cultivated, from one-and-a-half to two feet high, and has one large spike of flowers, with smaller ones round it, in the way of the White Rocket. We consider it a handsome plant, the flowers being bright yellow, and very double. I am not botanist enough to describe it scientifically. S.

TO CORRESPONDENTS

SOWING AURICULAS (*C. E. B. T.*).—Seed may be sown now, but this sowing will not flower generally till 1853; yet sow now by all means, for the plants will be much stronger than plants sown even in early spring.

CARNATION SEED (*Ibid.*).—This may be sown now on the same principle, that the plants will be stronger than plants from seed in early spring the year before.

THERACLEUM GIGANTEUM (*Ibid.*).—The flowering age of this plant is two years, but much depends upon the strength of the plant; your's will, we think, flower this year. Water freely, if dry, at all times when necessary. We saw a leaf of this lately grown by Messrs. Hardy and Son, Maldon, Essex, the total length of which was five feet three inches, and the greatest breadth four feet six inches. The thickest part of the stalk was eight inches in circumference.

GRAFTED EPIPHYLLUMS (*F. W. T.*).—These do not require any different treatment to those on their own roots. You should set your *E. Russellianum* out of doors now, in an open situation fully exposed to the sun all day. Water when very dry, and bring the plant into a *greenhouse*, placing it near the glass, as soon as there is the least fear of frost. This exposure will ensure it to flower, because it ripens the shoots. Take it in certainly by the middle of September. Keep it dry through winter, and commence watering about the middle of March, but not abundantly, or the roots will not be benefited, but injured by excessive watering. Keep it rather cool in the spring till the flowers appear, and when a little advanced, increase the heat 10° by day. *Gesnera Zebrina* is a stove plant; 70° of heat is proper for it. The old bulbs do not die annually.

ROSES IN POTS (*A Subscriber from the beginning*).—Place your greenhouse roses out of doors at once, top dress them with some loam and rotten dung, prune them back to the lowest eye on the new wood, water freely after they begin to grow again, and you will have roses through the autumn months.

GERANIUM GRAFTING (*Ibid.*).—It is not too late to graft geraniums. The best method is what is called side-grafting; that is, cut a deep notch out of one side of the branch, then make a corresponding cut on the scion, fit them together and tie with wet bass mat. They will soon take and begin to grow afresh. Keep them in a shady place until that takes place.

ROSE CUTTINGS (*Jane*).—From your account your cuttings are doing well; and instead of hurrying, you had better give them and yourself a little *patience*. Do not be disappointed if many should fail. If a goodly number succeed, that ought to satisfy a first attempt, and be a good reward for the trouble involved. The reason why your cuttings seem to stand still is, that the organisable material has chiefly been spent, and more must be assimilated before much fresh progress can be made upwards or downwards. Continue giving air at night, and shading from bright sunshine during hot days, and *patience* will be rewarded. Let your anxiety for having the cuttings grow quickly get the better of this advice, and we would not like to give you much for the batch. You complain that we do not give the *after treatment* in many of our papers, and that, therefore, when you get a certain length you are left in the dark, and apt to ask, "What next?" The oftener you ask, if with such good reasons, the better; but the fault cannot always be attended to. The stern editor might not mind how long a letter he had from a lady; but he would be very apt to cry, "Hold! enough," when any contributors exceeded their allotted space. The "good management" necessary to make cuttings of roses flowering plants the same season, is just similar to what is given to other plants that are to be rattled on. As soon as struck, the cuttings should be potted or transplanted, and have all the means for encouraging the *growing principle*, that has lately been referred to in these pages. By such process, with gradual exposure to more light and air, you would bring about the fructifying process, and, therefore, you would have flowers in the end of summer and autumn from those which naturally produced blooms at that period. Many will show flower early; but these had better be removed, to encourage the growth of the plant; as, independently of the weakening influence, a large flower upon such a lilliputian thing from the cutting-pot, is like fixing the head of Goliath on the shoulders of a Tom Thumb.

CUTTING-DOWN LEAVES OF HYACINTHS (*Ibid.*).—Doctors will ever disagree. Use your own common sense, and fearlessly cut the seemingly inextricable knot of the authorities you cite. As a general rule, no bulb is mature, or has received its full quantity of stored-up organisable material, so long as the leaves remain green. Some florists, however, imagine that *colour* is rendered purer when the bulbs are taken up just before

they are quite ripe. Some bulbs that require *resting*, and feel like naughty children indisposed to go to bed when ordered, we force to slumber by withholding water, &c.; but we would not do so with the hyacinth.

CAMELLIA PRUNING.—Mr. F. W. Tetley, of Ridge House, Leeds, writes to us thus:—"In an early number of *THE COTTAGE GARDENER*, on the culture of the Camellia, you state that they bear pruning as freely as apple-trees. This I have no wish to deny; but does not this convey the idea to an amateur that he may cut away without damage, as he would with a soft, woody, quick-growing plant? I felt the inconvenience of this remark myself, and cut my camellias in freely one year, and found, after the growth of the next, that my plants were scarcely so large as before I pruned them. The following year, by advice of an eminent camellia grower, I merely took out the bud at the top of the shoots, expecting to make the plants bushy, but this did not succeed; and this year I am following another plan, which so far promises well. I have bent down all the top and other bare shoots, and have tied them down with soft thick thread, or very soft twine, and find many buds have broken which otherwise would have remained dormant, and the plants, instead of having long, bare stems, are now feathered; and by following this practice I have little doubt of getting all my plants nice and bushy, and this with no diminution in the size of the plant. I have not broken one branch in this practice, so that they cannot be very brittle; and I think many amateurs would follow this practice if it were communicated to them." Your plan of bending down the Camellia shoots, to cause them to break, is a good one, and, where practicable, is better than pruning; at the same time we are certain, that if properly cut back the Camellia will break again freely, and make handsome bushes. There is a wide difference between the cutting in required by a Camellia and a Pelargonium.

ALONSOA AS A BEDDER (W. K.).—This bedding plant will do better from cuttings in the spring, treated in all respects like *Verbena* cuttings, than by seeds, if your ground is at all rich, as seedlings go too much to leaf, which cuttings do not. Two or more plants of it should be kept in pots through the winter, to get cuttings from in the spring. It is very easy to keep.

PETUNIAS IN BEDS (*Ibid.*).—Of course you planted them nine inches or a foot apart all over the bed; and pegging down means that the shoots, as they grow, should be trained over the bare places till they all meet, and so cover the whole bed.

CUTTINGS (*Ibid.*).—The spring is the best time to make a stock of cuttings of all the *Verbenas*, and other soft-wooded low plants like them; for *Geraniums* and *Calceolarias*, the autumn is the best time.

TRANSPLANTING EVERGREENS (A. B.).—If by "*laurels*," you mean the common laurel, you may go to work with them immediately, though they are fifteen feet high. If they are Portugal laurels, which are more difficult to move safely, wait till the second week in July.

CHIMNEY CAMPANULAS (W. C.).—You must mean the tall pyramidal Campanula, and no wonder that the same plants do not "throw up" a second time, for they never do; you are only growing a large number of sidelings from the collar of the old plants which flowered two or three years back, and although some of these side shoots might possibly flower, that is not the way to treat them. Slip cuttings from round the bottom of the flower-stalk should be made every year, in the autumn, or in the spring, from where the flower-stalk is to issue, and as soon as rooted, be planted out in rows, nine inches or a foot apart, on a bed or border made very rich. The strongest of the cuttings would flower the following year, and some not till the second season. Keep a lot of nursing plants always on hand, and pot the strongest for flowering every April, which is a better, easier, and more sure way than having them always in pots; good gardeners can alone manage them in pots.

SOWING SEEDS (J. M. U.).—Seeds of *Gladiolus*, *Humea elegans*, and *Calceolarias*, will not do at all to be sown in the open ground, nor will seedlings of either, from autumn sowing, stand over the first winter without protection. *Gladiolus* seed, sow in pots as soon as ripe, or leave to September, and keep the seedlings in the same pots over the winter, and next spring till the leaves die; in May or June, before they begin to grow again shake them out of the pot, and give them fresh soil, chiefly peat, placing six bulbs in a six-inch pot. *Humeas*—sow from January to April, or from April to the end of June, in pots, and in a close frame, for flowering the following year; early spring-sown ones will make the best plants. *Calceolarias* may be sown in the spring, summer, or in the autumn, as late as September.

CUTTING DOWN GERANIUMS (A. Y. Z.).—Old wood is brown, and young wood green; cut them a little below the green parts, and all the leaves will be gone; they will grow better from the brown wood, which is ripe. Those you intend to plant out need not be cut so close, only half way down the green wood, or say remove as much as will carry off half the leaves. You need not shake away all the balls from them till you take them up in the autumn, then you will have to cut them again, and trim the roots also, but all the leaves are not to be then removed; but you shall see all about them before the time of potting comes round. For those you keep always in pots, you cannot do better than follow Aunt Harriot's plan to the letter. She was the best manager of pot geraniums out of London, for many, many years.

BEES (W. B. C.).—Your hive is in the most properous state possible. If you will trouble yourself to examine the few bees brought out, they will be found to be young ones, and every one of them imperfectly formed,—some wanting a leg, some with an imperfect wing, and so on.

BEES (Clericus).—Mr. Payne's small hives contain about ten pounds of honeycomb, &c. In putting on a second small hive, it is better to have the hole in the wooden top two inches in diameter. In three or four weeks after the swarm has been in a common store hive, you may cut a 4-inch hole in its top to put on a small super.

BEES (Bob).—You say, "In the spring of this year I bought two hives of bees, both of straw; one of these I placed on Taylor's Amateur Bar-Hive, which is now nearly filled with comb, and I hope in the course of a few days to be able to remove the old straw hive, and to replace it with either the second bar-hive or glasses. I wish I could give as good an account of the second; the bees are literally doing nothing; a few congregate in the entrance and bask in the sun, but do not work; it is

respecting this hive more particularly that I wish your advice. I see by your number of 29th ult., that this state of things is caused by the old age or death of the queen; as a remedy you recommend placing a piece of larva and eggs in the inactive hive, by placing a comb from a "Taylor's" hive in it, but this with me is impracticable. I have double floor-boards, as figured at p. 30 of "Taylor's Bee-keeper's Manual," third edition, and had intended by means of it, to have transferred them to one of Nutt's Collateral-hives. Now how am I to act; will it be better to insert a piece of comb under the straw-hive, or fixing it in the Collateral-hive as a guide-comb, and by means of the doubling board force them to pass through it?"—You must not remove the straw-hive placed on Taylor's Bar-hive (you did very wrong in placing it there), you should have allowed it to swarm, and then have put the swarm into Taylor's hive. If you remove it now the bees will, in all probability, leave the Taylor's hive, and all return to the straw one. As regards your queenless hive, you had better put a piece of comb, containing both brood and eggs, into a small bell-glass; cut a hole at the top of the hive, and place the glass with comb, containing eggs, &c., over it, covering the glass with several thicknesses of flannel, or something of the kind, until the brood is all hatched.

BEES (C. C.).—You ask "The best remedy for bees putting brood in the glasses, which it is often difficult to prevent when the hive is very strong. I have a 6-inch and a 10-inch glass, both nearly full, on the same hive, but some brood in each. I have put an 8-inch square box under the smaller glass, and left a little space for air, so that the glass has been pretty cool since, and I hope her majesty will not again visit it. Can you recommend any better plan?" Had you given the ventilation earlier the queen would not have gone up. The best method of ventilating that we have heard of is Mr. Kitchner's *Ventilated Passage*, which you may see in the Exhibition, with two splendid glasses of honey obtained by its use. With this apparatus it is impossible for the queen to go up; we may, perhaps, at some future time give a figure and description of it.

BEES (B. B.).—"A short time since I informed you that I met with a drone brood in a glass partially filled with comb, and very little honey, when I went to place a super between the glass and the stock hive. I thought I had now effectually secured them from swarming, and was not a little surprised, on my return from church (1st June), to find a large swarm had issued from it, and was settled on the identical gooseberry-bush on which a swarm settled last year, and to-day (11th June), a cast came off (2½ lbs.), and settled on the same bush. I thought, from the number of bees in the super, and the brood in the glass above, that the bees would not have left them. There are very few in either; a small number over the brood, and others in the super raising the comb—upwards. In some of the pages of your work, I think I have observed that no profit can now be expected from this stock. It seems full of honey, all the cells to be seen through the window, are closed up. How should I proceed; the comb is raised up in the super two inches? (*Raise the super, cut away the two-inch of comb, and replace the straw top.*) The guide comb in the glass, the bees did not take to, but built upwards in it." (*We should have raised the glass, cut away the combs worked up, and then replaced the glass.*) Do not put on supers after July. Treat *Melilotus leucantha* as common clover; if sown in August, it flowers the next summer. The great number of drones arises from the stocks being very strong, and this is in favour of the doubling system.

CORN MILL.—A correspondent (*Incubator*) wishes to know where he can obtain one of the corn mills mentioned by one of our correspondents in our number for May 29th.

SCOTCH COWS (*Utile et dulce*).—They are usually black. They are hardy and good milkers, but inferior in the latter quality to the North Wales. If we can aid you further about the Jersey cows we will.

LABURNUM WITH VARIOUS FLOWERS (I. S.).—This is not at all uncommon. The sports you mention might be grafted or budded upon a common Laburnum stock, but would not be more permanent than on their parent.

ROSE FLOWER-STALKS (*One who fears, &c.*).—Cut them off close to the leaf whence they spring as soon as done flowering. They will not bleed. Take up your *Ranunculus roots*, and preserve them in sand in a dry place.

GOOSEBERRY CATERPILLARS (R. H. D.).—Sprinkling them with white hellebore powder, by the aid of a cook's dredging box, is the best mode of destroying them. In using *hard water* to plants, both expose it to the air and sun, and add a little ammoniacal water; they will then sustain no perceptible injury.

DUBLIN (*A Subscriber from the Beginning*).—We have given directions which, we hope, will prevent future delay. If delays occur oblige us by the information. We are totally unconscious of any omission in answering questions, and think you will find the answers, though we may have mistaken the signature. The earth that you enclosed is not loam, but very barren silicious sand. By *loam* is meant a soil containing clay and sand in fertile proportions.

BEES (J. H., Manchester).—Mr. Payne's *Bee-keeper's Guide*, of which a fourth edition has just appeared, will suit you.

BOTANICAL WORK (D. S. S.).—Lindley's *School Botany* will meet your wants.

PLANTS (Z. Z., Birmingham).—Any of the nurserymen and florists advertising in our columns can supply them. They are quite common.

ITALIAN RYE GRASS (W. Beardshall).—Taking your cows from such nourishing keep as hay, bean-meal, and bran, and putting them upon such watery food as young Italian rye grass, would necessarily cause their milk to decrease. Tares now are much more nourishing, and would restore their secretion of milk. Violent changes from highly nutritious to very relaxing green food is very weakening to any animal.

NAMES OF PLANTS (C. B.).—Your three specimens are *Polygala grandiflora*, a species of *Escalonia*, and *Metaleuca paludosa*. (*Queen Mab*).—Yours is *Veronica latifolia*, (I. S.).—Who could tell a *Begonia* from three very young leaves? They are like those of *Begonia parvifolia*. (S. R., Belcham Hall).—Yours is *Staphelia pinnata*.

BOTTLING GOOSEBERRIES (Wordsley).—We have it from good authority that gooseberries picked quite green from the trees into bottles,

corked tightly, and buried in the earth corks downwards, are just as good at Christmas as if freshly picked from the trees. The old *Red Rough* and the *Warrington* (both red) are best for preserving; but any of the white or green varieties do best for bottling.

HEN-COOP. A correspondent (*Cymro Glan*) says—"If *W. H. W.* would place the coops, of which he gives a sketch (page 138), upon four pillars of iron or wood, four feet high, placing stone flags upon the top of them, to project half-an-inch from the pillars all round, he would find it effectually secured from rats. Thus raised, the poultry-house should be made with a door, large enough to admit a person into the roosting and laying division, for cleaning, collecting eggs, &c.; the rest of the house to be adapted for sitting-hens, &c., rearing young chicks. Roof to be slated. The fowls always to be fed in the house; and sliding doors for them to go in and out in the day-time to be shut at night. A moveable ladder is also requisite, to reach the house. This plan has been tried with great success for six years."

CALENDAR FOR JULY.

PLANT STOVE.

AIR, give most abundantly by day, and partially by night. **AMARYLLIS** BULBS that have done flowering, place in a cool house, to cause a state of rest. *Amaryllis* (*Hippeastrum*) *aulica*, pot, and plunge in heat. **ACHIMENES** PELTA, put into wide shallow pans, and start into growth. **APHELANDRA** AURANTIACA, pot and grow on, to flower in winter. **BASKETS**, any plant in, water freely, by dipping them in a cistern of well-aired water. **BEGONIAS**, to flower in winter, repot and grow on freely. **EUPHORBIA** JACQUINIFOLIA, **ERANTHEMUM** STRICTUM, and **ERANTHEMUM** PULCHELLUM, require liberal treatment now, to cause them to bloom well in winter. BULBS done blooming, remove into a cool house, to induce rest. **CREEPERS**, tie in, and keep clean from insects. **CUTTINGS** of various kinds of fast-rooting stove plants may be put in now successfully. **GLOXINIAS** and **GESNERAS** done blooming, set out in the air in an open situation, to induce them to rest. **IXORAS**, give the last potting for the season to such as are intended for specimens; tie down, to allow the young shoots to spring up in the centre; stop these, to cause bushiness. **POINSETTIA** PULCHERRIMA, pot and place in heat, to start into growth freely. **PLANTS** (young), remove as many as possible into cold frames early in the month; this gives them a stout hardy habit, and helps to keep down insects, especially the red spider. **POTTING** may yet be done for all freely-growing young plants. **REST**, give to all bulbous plants, and early flowering shrubby and herbaceous plants. **WATER**, apply in abundance to the freely-growing species, but withhold it from such as have made their annual growths. **T. APPLEY.**

FLORISTS' FLOWERS.

AURICULAS and **POLYANTHUSES**, supply with water in dry weather; repot such as were not done in spring. **CARNATIONS** and **PICOTEEES**, shade from sun, and shelter from wind and rain; layer them as soon as the shoots are long enough. **CHRYSANTHEMUMS**, advance a stage by repotting. **DAHLIAS**, attend to tying; see the ties are not too tight; thin branches where too numerous; place traps to catch earwigs; look out for slugs, and if any are found water the ground with lime water; mulch freely, if not already done; and water abundantly in fine weather; put stakes to, if not done before. **Cuttings** put in of new and rare sorts; shelter the flowers when they open (See next month's Calendar). **HYACINTHS**, take up, dry, and store. **PANSIES**, save seed from; layer; protect from adverse weather; put in cuttings; seedlings transplant where they are to flower. **PINKS**, cut off decaying blooms; layer, and pipe—it is not yet too late. **RANUNCULUSES**, take up, dry, and store, e. **ROSES**, cut off all decaying flowers and flower-stems; destroy insects on, or the autumn bloom will be spoilt. **TULIPS**, take up, dry, and store, e. or b. **WATER** all florists' flowers in pots freely in dry weather. **T. APPLEY.**

ORCHID HOUSE.

AIR may yet be given freely, and moisture in liberal supplies, by wetting the walls, walks and pipes two or three times a day. **BLOCKS**, syringe daily, except such as may have ripened their pseudo-bulbs; remove such into a cooler and drier house. **DENDROBES**, continue to grow on for another month; water them abundantly. **INSECTS** breed fast during this month: apply the usual destroying remedy quickly and effectually. The white scale propagates the fastest of any of its class: wash the plants infested with it with a strong soap water worked into a lather, and laid on warm, but not hot. **SYRINGE** all the plants daily during the month, excepting it should prove cold and cloudy; let every part be kept neat and clean in every plant house. **T. APPLEY.**

GREENHOUSE.

AIR, admit freely night and day, unless when stormy; make an exception, however, in those cases where growth is still desirable. There shut up early, and use the syringe morning and evening. **BUD** and **GRAFT** oranges, camellias, azaleas, climbers, &c. **CUTTINGS**, make and plant, placing them in cool pits at a distance from the glass, or in a mild bottom-heat, according to their requirements. Dress and keep everything neat. **CALCEOLARIAS**, give manured water; fumigate when necessary; cut down early blooming; thin the pods of those left for seed, as one pod will give hundreds of plants. **GERANIUMS**, cut down the forwardest; tie and train successions; prepare for early supply of cuttings. **HEATHS**, cut down and prune when done flowering; give plenty of air to those in flower; shift those starting again after being pruned; and propagate by seeds and by cuttings in a pit under hand-glasses. Examine all **PEAT PLANTS** as respects water, for if dried up several times death is next to certain; your only chance is to set the pot or tub in water until all is saturated, and then allow it to drain. **SEEDLINGS** of all kinds prick off as soon as up, or they will be apt to fox off at the surface of the soil.

SHADE when necessary; it is better in bright weather than more air or delugings of waterings. **SHIFTING** must be attended to with all successions, such as fuchsias, geraniums, balsams, cockscombs, &c., and free-growing, quick-blooming plants, as *Achimenes* patens, and *coccinea*. **Tropaeolums**, and other twiners and climbers, must be trained and fastened daily. One of the prettiest ornaments for a window is the *Tropaeolum pentaphyllum*; when done flowering, keep in dry earth until they vegetate. **WATER** must now be given with great judgment, especially to newly shifted plants that have been transferred from a small to a large pot. In general circumstances, there is now as much danger from want of water as in winter there was the danger of giving too much, and giving it when not required. All bulbs that have finished flowering and growing are an exception; as soon as the leaves get yellow they should be encouraged to get into a state of rest as soon as possible by withholding water. Those that have their leaves yet green should be assisted with water until the bulbs are mature. **R. FISH.**

FRUIT GARDEN.

APPLE ESPALIERS, train, thin, and stop. **APRICOTS**, pick off caterpillars, and train. **CHERRIES**, cleanse from fly and protect from birds. **CUCUMBERS**, thin and stop frequently, and reserve specimens for seed. **CURRENTS** (red and white), prune back all side spray and top. **CURRENTS** (black), water freely. **FIGS**, thin out the wood, and stop. **GOOSE-BERRIES**, exterminate the caterpillar; thin out where bushes are overloaded. **MELONS**, train, stop, thin, set fruit, and water freely when swelling the fruit; also syringe on fine afternoons. **NUTS**, remove superfluous spray from the interior of the bushes. **PEARS**, remove waste shoots, stop, &c., according to advice previously given; thin fruit if too thick. **PEACHES**, make a final thinning of both fruit and wood; stop gross shoots wherever found. **PLUMS**, beware of the fly; stop, and thin. **RASPBERRIES**, thin suckers, and stop when more than five feet high. **STRAWBERRIES**, keep down runners, and water late kinds. **VINES**, remove extra laterals from those ripe, and continue stopping late grapes; water border, if dry and sound beneath, in dry weather. **R. ERRINGTON.**

FLOWER GARDEN.

ANNUALS (Tender), bring out from frames; dress; give fresh earth; stake and tie. **ANNUALS**, transplant generally. **AURICULAS** in pots, dress and water frequently; seedlings transplant; old plants repot, e. **Box** edgings clip, b. **BUDROSES**, jasmines, &c. **BULBOUS** ROOTS, take up (see June); seeds, sow. **CARNATIONS**, attend to (see June); shade and shelter during hot weather; water freely, and give liquid-manure. **CHRYSANTHEMUM** suckers separate and plant; lay. **CUTTINGS** of most herbaceous plants will root now, and of all the scarlet geraniums, if planted on a south border; b. **DAHLIAS** require support and pruning. **EDGINGS**, clip. **EVERGREENS**, prune; seedlings, prick out. **FLOWER-BEDS**, stir surface often; train; stop and often regulate the plants, to get a uniform growth and bloom. **GRASS**, mow and roll often. **GRAVEL**, weed and roll. **HEARTSEASE**, plant slips, e.; water freely. **HEDGES**, clip. **HOE** and rake at every opportunity. **LAYERING** carnations, &c., may be performed, b.; water freely; transplant rooted layers. **LEAVES**, decayed, remove as soon as seen. **LIQUID-MANURE**, give occasionally to flowering shrubs. **MIGNONETTE** and a few other quick-flowering annuals may be sown, b., for autumn. **PIPING** of pinks, &c., may be still practised, b. **PELARGONIUMS** cuttings plant, b. **POLYANTHUSES**, seedlings, transplant; roots of old, part. **ROSES**, bud and layer, b. **SEEDS**, gather as they ripen. **STAKE** and tie up plants wherever necessary. **TRANSPLANT**, b., from the reserve garden in damp or dull weather. **WATER** freely, not only the roots, but over the foliage. **D. BEATON.**

KITCHEN GARDEN.

ALEXANDERS, earth up in dry weather. **ASPARAGUS**, discontinue cutting; keep clean from weeds. If salting has been attended to, none will appear; but earth-stir with some pointed instrument. **BROAD BEANS**, save seed from the best kinds; a small planting may be made of the *Early Mazagan* kind in an open south border, and well watered at the time of planting should the weather be dry. **BORAGE**, sow, and thin out a foot apart. **BORECOLES**, plant out and prick out; in all cases well water at the time of planting. **BROCOLIS**, treat the same. **CABBAGES**, plant out; sow seed about the 20th of the month, in an open situation; should the weather be dry, well water previously to sowing. **CAULIFLOWERS**, plant out; supply those that are forward in growth with plenty of water; invert a few leaves over the heads of those turning in. **CUCUMBERS**, attend to daily as to thinning, topping, training out, top-dressing, and watering. The hand-glass crops, fork up the earth round about their roots, allowing them sufficient room to run out freely. **ENDIVE**, of both sorts, make a good sowing toward the middle of this month, and plant out previously sown plants. **KIDNEY BEANS** (dwarfs), at this late season, should be sown in open, warm borders. **MELONS**, attend to earthing-up late planted-out crops; do such work in the afternoon; shut up close; setting the fruit is best done about 10 or 11 o'clock in the forenoon; give plenty of air to those ripening off their fruit; be sparing of the water among the ripening fruit. **ONIONS**, well thin out, weed, and earth-stir; press down stiff-necked onions as they advance in growth. **PEAS**, at this late season, sow early kinds in open warm situations; well water at the time of sowing in dry weather. **VEGETABLE MARROWS**, train out and thin out. **PEAS**, save seed from the best favourite kinds. In all kinds of **PLANTING-OUT**, take advantage of dull weather, and water well at the time of planting. Make good use of **THE HOE** in dry weather, in cutting down weeds and earth-stirring. I never like to see the rake used much in the kitchen-garden. **T. WEAVER.**

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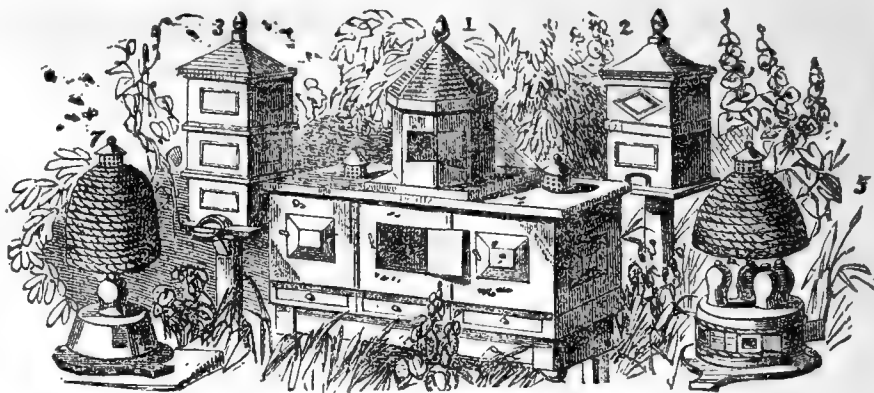
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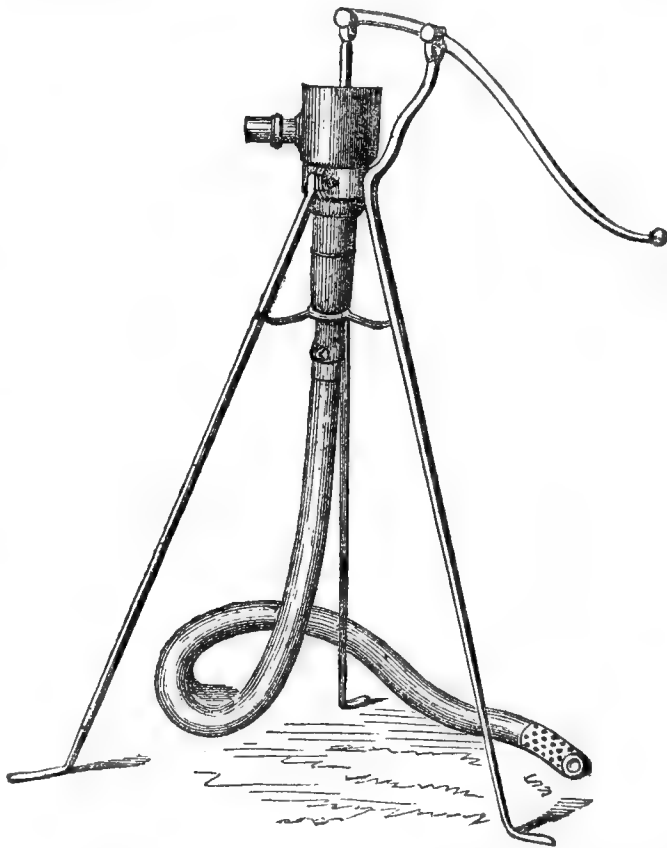


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WEEKLY CALENDAR.

M W D D	JULY 3—9, 1851.	WEATHER NEAR LONDON IN 1850.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bef. Sun.	Day of Year.
		Barometer.	Thermo.	Wind.	Rain in In.						
3 TH	Dog Days begin.	29.745—29.667	73—58	W.	0.01	50 a. 3	18 a. 7	11 11	4	3 46	184
4 F	Cambridge Term ends.	29.702—29.697	67—43	W.	—	51	17	11 36	5	3 57	185
5 S	Oxford Term ends.	29.973—29.772	76—45	W.	—	51	17	11 59	6	4 8	186
6 SUN	3 SUNDAY AFTER TRIN. Old Mid. Day.	30.097—30.078	79—48	S.W.	—	52	16	morn.	7	4 18	187
7 M	Calamint flowers.	30.065—29.995	86—52	S.	—	53	16	0 22	8	4 28	188
8 Tu	Wood-betony flowers.	30.129—30.038	88—50	S.W.	—	54	15	0 46	9	4 38	189
9 W	Cranberries ripe.	30.276—30.223	84—49	N.W.	—	55	14	1 12	10	4 47	190

BOTANY, in its most comprehensive acceptation, that is, including the physiology as well as the classification of plants, is a chief part of the only foundation upon which an enlightened practice of gardening can be raised. Consequently, previous to the reign of Elizabeth (1558—1602.), horticulture, in England, was considered as little more than a mechanical art; for botany itself, before that period, was almost unknown as a science. It was not, however, in England alone, that the study and cultivation of plants then became more popular, there were many tributary streams to this branch of the river of science; our ancestors were only followers of an example that was set by many continental powers, and which seems to have risen from a desire for the improvement of a knowledge of plants, and their culture, which pervaded Europe simultaneously at this period. Padua took the lead by establishing a public Botanic Garden, whilst under the Venetians, in 1533. Lucas Ghinus, at Bologna, who was the first public professor of botany in Europe, was a strenuous advocate of such institutions. By his influence a similar garden was established at Bologna, in 1547, where Dr. Turner, our earliest writer on botany, first imbibed much of that knowledge, which rendered him eminent in this country. Among the earliest private gardens of the same kind, was that of Enricus Cordus, at Bremen, who died in 1538; of Mordecus, at Cassel, who flourished about the same time; and Gesner constructed the first Botanic Garden in Switzerland, at Zurich, in 1560.

Nor was England backward in joining this simultaneous effort to increase the genuine knowledge of plants, for JOHN GERARDE founded here, in 1567, the first regular establishment for their scientific cultivation. His Physic Garden was in Holborn, then a village without-side the city walls, and celebrated for more than one large mansion, with accompanying horticultural establishments. Here were his noble master's gardens, for Lord Burleigh's grounds covered some fourteen acres of ground where Hatton Garden stands, and is now commemorative only in name. Of his garden, Gerarde published a catalogue, and one copy alone survives in the British Museum, to inform us what were the 1039 species which Lobel attests to have seen flourishing there. It is a little quarto pamphlet of eighteen pages, and is so unique, that it deserves to be more particularized. The title page is inscribed "*Catalogus arborum, fructuum, ac plantarum tam indigenarum, quam exoticarum in horto Johannis Gerardi, civis et chirurgi Londinensis nascentium. Londini. Ex officina Roberti Robinson. 1596.*" (Catalogue of trees, fruits, and plants, as well native as exotic, growing in the garden of John Gerard, citizen and surgeon of London.) It is dedicated to his master and patron, Lord Burleigh, and he speaks of the plants as being cultivated by himself for some years "in my suburban little garden." Nor was this the only effort made by Gerarde, practically to improve the botany and gardening of his time, for he prompted his master, then Elizabeth's Prime Minister, to urge the University of Cambridge to establish there a Botanic Garden, nor does it throw a suspicion across Gerarde's motives, that he sought to be connected with the establishment. He longed to have more powerful means of promoting the science he loved, and justly conscious, that no man then in England was more competent to superintend their effectual employment, he prepared the following document, which, thus endorsed, we find among the Burleigh Papers.

"John Gerarde, a letter of his own drawing for your lordship to sign for the University of Cambridge for planting Gardens."

"After my most hearty commendations, &c., as it hath been always mine especial care (neither doubt I but it is yours also) to procure by all means possible, the flourishing state of your University in religion and liberal sciences so that at this present (to my great comfort) I see it not inferior herein to any University in Europe or any other part of the world were it not that many famous Universities (as Padua, Montpellier, that of Vienna and others) had prevented or rather provoked us by their good example in purchasing of public gardens and looking out men of good experience to dress and keep the same. Whereby that noble science of physic is made absolute as having recovered the faculty of *simpling*, a principal and material part thereof. Wherefore, not doubting of your readiness in imitating or emulating the best in so laudable actions I thought it good to move you herein to commend this bearer JOHN GERARDE a servant of mine unto you; who by reason of his travails into far countries, his great practice, and long experience, is thoroughly acquainted with the general and special differences, names, properties, and privy marks of thousands of plants and trees. So that if you intend a work of emolument to yourselves and all young students, I shall be glad to have nominated and furnished you with so expert an Herbarist, and yourselves, I trust, will think well of the motion and the man. Thus desiring God to prosper all your godly studies and painful endeavours I bid you heartily farewell. (Lansdowne MSS., 107. *Phit.* lxxv. E. fol. 92.)

Gerarde failed in his embassy, and until very recently Cambridge remained without a Botanic Garden, but he was not disheartened, though he had hoped, probably, to make that garden assistant to the preparation of his "*Herbal*," which was in progress when he published his Catalogue, for he styles this "the forerunner of my larger work." This "larger work," and it well merits such a designation, being a huge folio, was published in 1597, and bears this title:—

The Herbal or general history of Plants, gathered by John Gerarde of London, master in chirurgerie.

It is dedicated to "his singular good lord and master," Lord Bur-

leigh, who was a great encourager of gardening, and to whose plant stoves, Gerarde thus alludes:—"Gardens, especially such as your honour hath, do singularly delight, when in them a man doth behold a flourishing show of summer beauties in the midst of winter's force, and a goodly spring of flowers when abroad a leaf is not to be seen." Speaking of himself, he says:—"Myself one of your servants, and under your lordship I have served, and that way employed my principal study, and almost all my time now by the space of twenty years. To the large and singular furniture of this noble island I have added from foreign parts all the variety of herbs and flowers that I might any way obtain. I have laboured with the soil to make it fit for plants, and with the plants to make them delight in the soil, that so they might live and prosper under our climate as in their native and proper country; what my success hath been and what my furniture is, I leave to the report of them that have seen your lordship's gardens, and the little plot of my special care and husbandry." That "little plot," we have seen, was in Holborn.

Prefixed to this vast volume, are many laudatory epistles, but not one more than it deserves for it embraces not only all the information published by other botanists, but with much added that was original, and, being in plain English, aided in no small degree to promote and render popular a diffusion of the taste for Botany. Among the laudatory epistles are one from Dr. Lancelot Brown, the Queen's Physician, Matthias de Lobel, the ancient botanist and Gerarde's ancient friend, and many others. Among them is one from the Rev. Thomas Newton, clergyman of Ilford, Cheshire, who says, after lauding his botanical knowledge—

"Gerarde, I congratulate you and myself; Namptwich I congratulate, and all Britain, that thou and I were born of Cheshire parents, though thou wast born under a happier star."

"Thomas Thorney, master in Chirurgery," also sings to him, among other praises, in good English verse—

"Herein (as in a glass) we see
How thou thy mind hast bent,
Thy body toiled, thy time bestowed,
And many a pound hath spent.
In sleepless nights, in restless days,
In places far and near,
In searching this, in trying that,
In countries here and there.
Preferring still the common good,
Neglecting still thine own,
And art content that we shall reap
The seed which thou hast sown."

George Baker, "one of Her Majesty's chief surveyors in ordinary," says—"If I may speak without partiality of the author of this book, for his great pains, his no less expenses in travelling far and near was never contented with the knowledge of those simples which grow in these parts, but upon his proper cost and changes hath had out of all parts of the world all the rare simples which by any means he could attain unto, not only to have them brought, but hath procured by his excellent knowledge to have them growing in his garden. I do not think, for the knowledge of plants, that he is inferior to any; for I did once see him tried with one of the best strangers that ever came into England, and was accounted in Paris the only man, being recommended to me by that famous man M. Ambrose Pare, and he being here, was desirous to go abroad with some of our herbarists, for the which I was the mean to bring them together, and one whole day we spent therein, searching the most rare simples, but when it came to the trial, my Frenchman did not know one to his four."

In his own preface, dated "From my house in Holborn within the suburbs of London, this first of December, 1597," Gerarde says, "I have here set down not only the names of sundry plants, but also their natures, their proportions and properties, their affects and effects, their increase and decrease, their flourishing and fading, their distinct varieties and several qualities, as well as those which our own country yieldeth, as of others which I have fetched further, as drawn out by perusing divers *Herbals*, wherein none of my countrymen have taken any pains, since that excellent work of Master Doctor Turner; after which time Master Lyte, a worshipful gentleman, translated Dodonæus out of French into English, and since that Doctor Priest, one of our London College, hath (as I heard) translated the last edition of Dodonæus, which meant to publish the same, but being prevented by death, his translation likewise perished."

Attempts were made to throw discredit upon this statement, and to attach to Gerarde the ignominy not only of having appropriated to his own use the translation of Dr. Priest, but thus to have repudiated the obligation by this deliberate falsehood. We believe the charge to be unfounded, and shall have occasion to state the reasons of our belief when giving a memoir of the editor of his *Herbal*. That editor gives us the only other fragment of Gerarde's biography in this uncertain sentence—"he lived some ten years after the publishing of this work, and died about the year 1607."

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-four years, the average highest and lowest temperatures of these days are 75.5° and 52.4° respectively. The greatest heat, 95°, occurred on the 5th in 1846, and the lowest cold, 40°, on the 9th in 1839. During the period 104 days were fine, and on 64 rain fell.

IN answer to our request, that our readers would furnish us with reports of the state of the fruit crops in their vicinities, we regret that but two parties have hitherto responded to our request. We publish them thus prominently to repeat our request, and to stimulate others to send us such information, because every one will appreciate what valuable suggestions are afforded by Mr. Rivers. We need scarcely add that Mr. Rivers is the well-known and able nurseryman of Sawbridgeworth, in Hertfordshire.

"SAWBRIDGEWORTH.—Soil: loam and clay, resting on sand. Surface undulating, in a valley yet many feet above water-level of the contiguous valley of the Stort, a branch from the valley of the Lee; and deep vegetable soil resting on gravel and loam; the latter on a hill, with a slope to the south-west. The temperature here, as regards frost, is exactly that of Chiswick, the thermometer registering the same. April 26th and 27th. Weather very dry, thermometer registered 25 or 7 degrees of frost; and again on May 14th, hoar frost equally sharp.

"PEARS.—On fine standard trees or pear stocks, from 15 to 25 years old, of *Beurré Capiaumont*, *Williams' Bon Chrétien*, *Beurré diel*, *Dunmore*, and *Marie Louise* (this is the sixth season in which the latter sort has totally failed), are all, or nearly all, destroyed. *Ne plus Meuris* and *Comte de Lancy*, on trees of the same description and age, have set their fruit well; *Beurré Capiaumont*, *Marie Louise*, and many other kinds of young pyramids on quince stocks have set a very fine crop; and yet I was almost induced to think that from the blossom-buds of trees on quince stocks commencing to swell and burst earlier in the season than those on pear stocks, they would be more susceptible of injury from spring frosts. They do not, however, come into blossom earlier, although they commence to swell at the first burst of spring. Two thousand pyramids of the pear *Louise Bonne of Jersey* were in full bloom on the fatal 27th of April; they did not appear injured by the frost, and looked white and beautiful for several days after, the germs also were green and fresh; but the hoar frost of May 14th seemed to finish them, for nearly all are gone.

"APPLES are a most abundant crop. I never saw them bloom so vigorously, or set their fruit so well.

"GOOSEBERRY and CURRANTS most abundant, and CHERRIES the same.

"PLUMS of *English origin* are abundant. These English seedlings are the *Diamond*, raised by a gardener of that name in Kent. It is a very large coarse plum, but most excellent for preserving. *Chapman's Prince of Wales* has this season withstood the frost well; the trees are full of fruit. In 1849 and 1850 every blossom was killed. The *Early Prolific*, a seedling raised here, and one of our earliest plums, seems to bid defiance to our sharpest spring frosts; for last year (May 3rd), when the trees were in full bloom, the thermometer registered 23, or 9 degrees of frost, and yet I had a plentiful crop. The *Autumn Compote*, another seedling raised here, failed in 1850, but this year the crop is good. *Green Gages*, and most of the plums of *French origin* have failed. This seems to give hopes that fruits to a certain extent may be acclimatized, for some seedling pears raised here, which have blossomed this spring for the first time, and were in full bloom April 27th, have set an abundant crop. I must, however, mention an anomaly. The *Pruna d'Agén*, or Date Plum; the plum which is used in France for prunes, of which such vast quantities are exported. Now this plum comes from the south of France, and yet last year, this and the *Early Prolific* were the only sorts that bore a crop; and again this season it has withstood the frosts, and the trees are full of fruit.

"PEACHES and APRICOTS against walls are here a failure, whether protected or not, the weather all March was so damp and cold that all the blossoms dropped. The peach trees are also in a very bad state, the leaves curled, and the aphids abundant. Some peach trees in my orchard houses are full of fruit, and in fine vigorous health. They had not a drop of water from November till the end of

February. Now I hope I have given Mr. Errington several themes to dilate upon."

The other report is from BALHAM, Surrey, and merely states:—"Wall-fruit, none. Cherries, Gooseberries, Currants, and Apples, capital crops; especially of apples."

It has often suggested itself to our attention that the greatest accommodation would be afforded to amateurs residing in distant parts of the United Kingdom, far from railway stations, and still further from first-rate florists and nurserymen, if these would supply cuttings, grafts, buds, &c., instead of rooted and potted plants. To obtain the latter, by rail, or other conveyance, often costs more than the plant itself, whereas cuttings might be transmitted by post for a penny or twopence. Plants might be cultivated especially to yield cuttings and buds; and no amateur would object to pay a good price for the convenience. Any nurseryman adopting this suggestion, and advertising his prices, &c., at the proper seasons, would be well remunerated. To show that we do not write hypothetically, or from an unsustained opinion, we will conclude with this extract from a letter received by us from a gentleman near Dublin:—

"Judging from myself, there are many who would be glad to buy cuttings and slips from nurserymen living at a distance, and where the readiest or only means of carriage would be through the post. Along with your last week's publication I got some catalogues, in both of which there are things readily propagated by cuttings; and of which the postage of the smallest-rooted plant, with its packing, would be more than the plant itself, but of which three or four cuttings (under an ounce weight) would be sure to grow, at least, one specimen. I think any nurseryman who will begin the practice of offering cuttings of Geraniums, Fuchsias, Carnations, &c., &c., at a reasonable and sufficient abatement from the price of rooted plants of the same, will find speedily a very large accession of customers. There are many, like myself, who have time, inclination, and taste for the culture of flowers, but who must set a peremptory limit to expenditure on what is, after all, but a pleasure; who will be glad to make their £2 or £5 extend over the greatest space and number possible; and to whom one plant raised by their own hands and care is more precious than two got in the nursery."

GARDENING GOSSIP.

WE have convinced ourselves this season that a vigorous application of water alone by the syringe, with very fine holes to the rose of it, will completely defeat the mischief of the *Green-fly* or *Aphis* on *Roses*.

It was used three times a day to some climbers against a house, and a few standards, that were literally covered with the *Aphis* before we discovered them, and in three days we had banished them. The third day they were clear, but we syringed them notwithstanding. We believe this was labour thrown away, and we have no doubt they were pretty well cleared by the first three applications, and quite clear the second day. A neighbour of ours has found it just as efficacious, for his trees are as clear as possible. The syringe is of great service because it is a mighty purifier; neither dust nor insects can stand against its repeated attacks.

Messrs. Rendle & Co., of Plymouth, have sent some of their plants to Her Majesty, and the present, which

was worthy of the occasion, has been duly acknowledged in a letter of thanks and approbation.

A lengthy and warm discussion has taken place among a few who occasionally act as judges, as to *how such plants as Fuschias, Balsams, Calceolarias, Geraniums, &c., ought to be estimated*: whether by their growth and management, or their excellence as show flowers; and it was especially pointed out how perplexing it is, when one set of plants are of the most trumpery kinds but exquisitely grown and managed, and another set of the best varieties but grown in small pots, and only grown without an effort.

Many were the arguments, numerous the suggestions; but all agreed that Societies ought to limit the size of the pots for all things in which the superiority of the varieties was the main point, and to distinctly let all exhibitors know the conditions of showing. Some glaring inconsistencies were mentioned, where, in one case, the judges gave it to growth, in the other to quality. It is worth the Societies' notice, because we saw, at a provincial show last month, calceolarias in 12-sized pots competing against others in 48-sized pots. The smaller ones were the better in flower, with nothing against them but the size. The larger were "well done," as it is called, but the flowers were gone by in these days of form. Now, as in this case it was distinctly stated in the prospectus or schedule, that "all subjects were to be judged by the rules laid down in the 'Properties of Flowers,'" the small ones were placed first; but some limit ought to be put to the pots.

The *Staines Horticultural Exhibition* augured well for the science in that quarter; last year the judges cut down many of their liberal prizes, because the productions were not worthy of them. This year their large silver cup was worthily won by Mr. Dodd, son of Mr. Dodd, of Cleifden, a worthy chip of the old block, with ten plants worthy of Chiswick.

Balsams were fine; the winning six were as broad as they were long. The second, in point of meritorious management, were all alike; whereas, the schedule distinctly offers the prize to varieties, and plants of an inferior growth took the honour because they were varied; but there were several competitors, one of whom had actually fastened down the side branches with cords. The *Geraniums* were very beautiful, and the prizes well contested. *Pansies* were abundant, and *Roses* as well shown as ever we saw them. The *Ferns*, and a collection of *indigenous plants*, were highly credible. In fact, most of the classes were well contested. Amateurs and gentlemen's gardeners form two classes. This we do not think advisable, because, whether the master, who is an amateur, or his gardener, shows, is of no consequence either to the show or the science, and, if "an amateur" is interpreted "one who has no gardener," it is not likely that there will be enough to make a good competition; and even this class of amateurs can generally beat a gentleman's gardener, who has so many different things to mind. It is clear, however, that *Staines* is greatly on the advance. The cottager's productions were highly creditable; and the Society has the advantage of two indefatigable secretaries.

Vauxhall Horticultural Show on the eighteenth was, as we predicted, a total failure as far as the manager was concerned; it merely answered the purpose of those exhibitors who are the first to promote a new show, because they are sure to come off winners, let the proprietors fare as they may.

We are sorry we did not fall in with the manager to prevent him from being deceived; we know something of all the shows that ever took place in these gardens. It is only common justice to the proprietors to say, that they kept faith to the full extent with the exhibitors.

A complaint was made at a recent meeting that

Advertisements sent to THE COTTAGE GARDENER were not inserted for some time afterwards; but it was explained at once, that all advertisements must be sent on or before *the Thursday previous to the publication*. If, therefore, anything is sent on the Friday, a second week is lost.

The gossip at one of our London meetings turned upon the subject of *Balsams*, which several growers complained of having drawn up too much, in spite of all the care bestowed on them. The recommendation of one party was laconic enough, "when my balsams are too long," said he, "I shorten them."

However, in explanation he added, "I find them strike like weeds in bottom heat, therefore, I cut off the tops two inches longer than I want them to be above ground, and pot the tops singly two inches in the soil, with the under leaves stripped off that portion; I place them in bottom heat, shade them for a week, and I find I have just so many plants as dwarf as I want them. The bottoms break out and make capital border flowers." E. Y.

Under this head at p. 174 will be found a strong condemnation of the management of the last *Cheltenham Horticultural Show*. That condemnation has elicited the following from a gentleman, who has sent us his name, and we unreservedly hope his statement is correct; at all events, we publish it at once, without waiting to hear from our own reporter, who must either substantiate his condemnation, or acknowledge that he was misinformed.

"Under the head of 'Gardening Gossip,' in your number of the 19th inst., I find an article which I cannot allow to pass without comment, simply because *there is not a single statement founded on fact*; and, if uncontradicted, might be an injury to the Cheltenham Horticultural Society; some of whose members have been and are doing their utmost to cause their shows to be the first and most attractive out of London. The Horticultural Society *never* farmed the exhibition out to private speculators; they *never* have been threatened with law proceedings, having always paid the money on demand when due; neither have they ever cut down the prizes published, except when the judges (men selected from those in the habit of judging at Chiswick) refused to award the prizes, in consequence of the specimens produced being, in their opinion, unworthy. With regard to the schedule, I enclose one for your perusal; and though there may be errors and room for improvement, I do not think it can be called ridiculous; and if you will suggest any improvement, I have no doubt that next year the committee will be glad to profit from your experience."

NEW PLANTS.

THEIR PORTRAITS AND BIOGRAPHIES.

GUELDER-ROSE-FLOWERED DOMBEYA (*Dombeya viburniflora*).—*Botanical Magazine*, t. 4568.—The genus to which this plant belongs is included in the Natural Order *Byttneriads*, and in the 16-*Monadelphia* 8-*Polyandria* of the Linnæan system. Like the rest of the genus it is an evergreen stove tree, being a native of the Comorin Islands, near Madagascar, whence it was introduced into Mauritius by Professor Bojer, and thence to the Kew Gardens, where it has attained a height of about fourteen feet.

Branches, hairy; *leaves*, heart-shaped, 3-lobed, saw-edged, above green and downy, beneath pale and woollyish; *leaf-stalks*, hairy; *stipules*, large, pointed oval, deciduous; *flower-*

stalks, about nine inches long, from the axils of upper leaves, hairy; *flowers* white, in three or four semi-globular clusters



or corymbs; *calyx*, five-segmented, woolly; *petals*, glossy and horny when dry; *stamens*, monadelphous, dividing, however, into five bundles of three each, with a barren stamen between each two bundles; *stigmas*, five, spreading; *ovary*, spherical and hairy.

It grows quickly, is readily propagated by cuttings, in bottom-heat, under a glass; requires a light, rich loam, and abundance of water.

The name of *Dombeya* was once assigned to a genus of the Pine tribe, but the species on which it was found, *D. chilensis*, is now known as *Araucaria imbricata*. Both genera were named in honour of M. Dombey, a French botanist, employed for several years by the King of Spain, in collecting, together with MM. Ruiz and Pavon, the plants and other natural productions of Peru. Returning to his native country, he finally was enrolled among the martyrs of science; for, being sent by the National Convention to examine the Flora of North America, he was captured by an English cruizer, was carried into Antigua, and died there in 1796, in the 51st year of his age. J.

THE FRUIT-GARDEN.

STRAWBERRIES RIPENING.—It is not too late yet to warn our readers of the necessity of paying the utmost attention to the fruit whilst changing colour; for if a wet period occurs, and the plants are gross in habit, it is in vain to seek for satisfactory flavour, unless extra means are taken to encourage a free circulation of air, and the admission of sunshine, together with a prevention of accumulating damps, leading to rot, mouldiness, and a general deterioration of quality. There has been a good deal of fuss made about certain celebrated tiles, but it is well known that such things are frequently, when tested, any thing but a step in advance. For our part we have availed ourselves of the half-decayed slates from an old shed; and the principal dessert Strawberries being in double rows, about twenty inches apart, and on beds elevated six inches above the ordinary level, we have two capital *outsides*, each forming an incline; this incline we face with the slate, and cover the ground between, on the surface of the bed, with clean, new wheat straw. From the exterior, the best flavoured dessert fruit will come, and those from the interior may

be used in confections or preserves. It is really not advisable to place any tiles or other impervious surfacing over the surface of the ground *long* before the ripening of the fruit. Such, in the majority of seasons, will be found to render the fruit dry and crippled, by excluding, in a wholesale way, that moisture so essential to the Strawberry during the period of swelling. It is not improbable that some material having small holes in all directions, after the manner of malt-kiln tiles, might prove serviceable; inasmuch as water, when necessary, might be conveyed in an equable manner to the roots. In this case *colour* in the material would be an important consideration, trifling as it may at first sight seem. Now, everybody talks a deal about the utility of black as applied to fruit culture; the only one idea, it would seem, being, the necessity of trying to *accelerate* ripening in adverse periods. It may be submitted, however, that under many circumstances, it is more the part of common sense to ward off by reflection, or otherwise to alleviate, the parching efforts of continued sunshine. Such, during a very still condition in the atmosphere, is but too apt to scorch and blister some tender-skinned fruits; or if it proceed not so far, it very frequently hurries the fruit into an imperfect ripeness.

To digress for a moment, to a point which has a collateral bearing on the subject, we feel persuaded that one of the principal reasons of the unsatisfactory flavour of some of our *new Pears* is the disproportion the aggregate amount of light bears to that of the heat. This hypothesis would seem to account for the very contradictory statements we receive from various districts concerning the very same kind; for we well know that in those counties or portions of the kingdom where, on the average of years, the greatest amount of rain falls, there a murky atmosphere, on the whole, must be most prevalent. And so, in all probability, with the Strawberry: a free admission of light, with as free a circulation of air, is indispensable to flavour, doubtless; and if a non-absorbent material is placed under them, it assuredly, to be generally useful, should not be selected on the grounds of extreme absorption of heat. Of course our adoption of slates in the present case will strike the reader: let it be remembered, however, that they happen to be at hand, and that we have no better material; also, that the beds in question run north and south, and, therefore, the two slate inclines are exactly east and west, in which position they will not absorb one-half the solar rays that a southern incline will do. Those who have an incline of the latter character might try a non-absorbent material of a white colour, against one of black, in a similar position; this would tend to settle the matter. And here we wish some of our ingenious amateurs, who have more leisure than some folks I could name, would take up such matters, and *faithfully* report on them. Such would be of eminent service, and by means of an increase of materials of this character, the writers of such works as THE COTTAGE GARDENER would be able to generalise occasionally in a manner exceedingly useful to their readers. Facts of this kind must not be considered in an isolated point of view: they have, in general, exceedingly broad bearings; and to show forth the latter is much the province of those who unite the rudiments of sound science to a long and varied experience in practical details.

It requires some little management during showery weather to secure the ripening fruit; for it is of no use leaving it on the plants when fully ripe, and most persons need all they can obtain for preserving or culinary purposes. The moment the fruit is dry, on each morning, it should be looked over, and gathered carefully in flat-bottomed baskets, and, if possible, in single layers. These, if required to remain a day or so in the baskets, must be suspended in some place that is particularly dry and somewhat cool, and must be handled or

removed with caution. The birds and the mice must be particularly guarded against, and a good gun and some traps will be found useful adjuncts of the strawberry harvest. The blackbirds and thrushes are sad pests in some districts; we have had some rattling experience of their labours for a score years or more, and our practice has been to use small iron traps like the ordinary rat-trap, about four inches across when expanded; and they are, indeed, most efficient, although we must confess to a secret pain whenever we have seen a bird in them.

Runners should be well kept under in whatever stage, provided they are really not wanted; yet, now is the time to select and encourage some of the most forward for forcing purposes, as also to reserve sufficient for making new plantations where necessary. An eye should be kept on the *Eltons*, or the *Alpines*, for successional crops, and, of course, grown as a special and distinct class. Bed-culture we have hitherto found best for the *Eltons*; but some good practitioners confess to a predilection for the single-row system. We find it necessary to look over the beds once or twice in the end of June and during July, in order to thin away superfluous runners, or to cut away barren stems; both of which produce much injury by intercepting the light, and preventing a free circulation of air. If a dry time occur whilst the *Eltons* are swelling the bulk of their crop, which will be from the beginning of July to the middle of August, water should be liberally given. As for the *Alpines*, they require much attention as to watering, or their size and general appearance will be very inferior. Their runners, too, must be well kept under; and any early fruit now swelling may be cut away, for such is of no use whilst the regular Strawberry season lasts; and the powers of the plants should be kept in reserve for the autumn supply.

With regard to runners for forcing no time may be lost; much depends on obtaining the very earliest, and in taking care that they are set to work forthwith. They should be selected in open situations as much as possible; and the best way is to lay them in pots, using a very sound loam, slightly enriched with good manure, for the purpose. Some persons use 3-inch pots, and others 5-inch; the latter are decidedly preferable. Such being properly drained, and filled with the compost, may be plunged here and there, wherever a good early runner presents itself; and the latter being placed on the surface, a stone will suffice to load it with, so as to retain it in its place. In a few days they will be well established, and may then be removed from the parent plant, and receive a repotting into their fruiting pots at once; for which purpose 7-inch pots are very generally used. Of course, they should be attended to in regard of water during the whole of their progress, and a very open and airy spot should be chosen, shade being highly injurious to the formation of a compact flower-bud. With regard to kinds for forcing, some prefer one kind, and some another. The old Keen's seedling is the most general favourite; but it has met with some formidable rivals of late. The British Queen is, doubtless, a fine fruit for either in-doors work or out; but it would seem to be fitter to succeed such kinds as the Keen's seedling, or the Black Prince; the latter is said to be a very useful early kind. By the way, the old Roseberry still finds admirers occasionally; it is certainly tolerably eligible for very early forcing, but how seldom do we find flavour under such circumstances.

Those who want to make new plantations may pursue a similar course to that suggested for the forcing lot. It is very good practice to prepare a plot of ground in beds of four feet in width, and to prick out the very earliest runners nine inches apart. The ground should be well manured with very rotten manure, and only dug or forked six inches deep; at least, such we have found

good practice. The object is to obtain speedy growth, and a somewhat early cessation of it; this causes the plants to form very compact buds, for the moment the roots come in contact with the hard bottom unmanured, their rampant character becomes tamed, and the whole plant is speedily solidified. These plants will be fit to remove in the middle of October to a permanent site, and may be taken up with capital balls of earth, planting them with a trowel. This course is particularly advisable where, from the severe limitation of ground extent, a summer crop must be taken off the plot before the strawberries are planted. Not every one can afford to make plantations, at full distance, with plants in the runner state.

R. ERRINGTON.

THE FLOWER-GARDEN.

MANAGEMENT OF BEDS.—On the average of seasons, except in very sheltered and warm situations, the great majority of the fashionable, or half-hardy, plants turned out into the flower-beds in May, do not begin to grow away in earnest till about this time. Hence the reason why we are obliged to plant them thick all over the beds, so as to make a good show at once, and hence, too, the small necessity there is for much training, or pruning, or regulating of the shoots during the month of June. Now, however, all these processes must be attended to diligently for the next two months at least. Let us, therefore, see how the best kept flower-gardens are managed in all these respects. In the first place, let us say that the fashion of the present day is that no particle of the earth in the flower-beds is to be seen, if it can be so managed. Formerly, we used to consider it good practice to have a small open space left all round a bed, whether it was bounded by grass or box-edgings, but now this small verge is denied us, and yet we must not show a cut edge along the ends of the plants. Every branch of a Geranium, Calceolaria, Fuchsia, and every trailing shoot of a Verbena, Petunia, Heliotrope, and all the rest of them, must appear as if it had grown exactly to the required length, or say rather, to the very edge of the bed and no farther. There is a great deal of nicety required to keep the edge of a bed always in this condition, and like most other eye and finger-work, the proper method of effecting it cannot altogether be learned from books—practice alone can give one the full mystery. The closest rules that I can lay down for this work are these: never to attempt to cut two adjoining shoots with the same cut; always to cut close to the leaf, and, if the leaf is large, never to cut it in two: it is better to remove it altogether than to see it cut across the middle; trailing shoots, at least many of them, should not be stopped at all so early as this in the season, but, as soon as they reach the side or boundary, train them along the outside, if there is room for them, and if there is not, turn the points towards the centre of the bed. I have seen Verbenas and Petunias injured by being constantly cut as soon as they reached the outside. Where Verbenas are mixed in a bed, for the purpose of shading the colours, there must, of necessity, be two or three degrees of strength in the plants, some being much stronger than others, and here the utmost precaution must be observed in pruning and training the plants; to stop a strong grower in order to keep it from running over a weak one is by no means the best way; rather double it back on itself for awhile, until the next shoot from the same plant is nearly as long, and then cut the first one away altogether, which we call thinning. Another way to deal with strong Verbenas that are planted in a mixture is to keep the shoots from making roots as they grow along, by raising them or moving them backwards and forwards every time you are dressing the bed. It is difficult to get men to do

this kind of work properly; they soon get tired of it, and few boys have their brains ripe enough to be trusted with shading on this training system; steady women are the best hands for it.

There is nothing at the Great Exhibition in Hyde Park from which a flower-gardener can learn half so much as in the way they arrange the shades of colours, particularly the wools and worsted things from Germany, and the gallery of "Stained-glass of All Nations," unless it be Mr. Owen Jones's disposition of colours for the house itself. We are sadly behind in *arranging colours in our flower gardens*; the subject is a difficult one, and I am quite sure that the best arrangement in one garden, either on grass or gravel, is not the one adapted best for some other gardens, and that to copy indiscriminately from one another is not making the best of our plants or our particular localities. But what we are to do now is to make the best of what we have on hand.

The laws and rules for managing edgings of beds, and the training of the plants, take another turn when a particular plant is used as an edging, such as, for instance, the *Virginian Stock*. These edge-plants may, and should be, kept cut on the sides for two reasons; first, to mark them out as distinct from the rest in the bed, and to keep them from making seed-pods; any plant that is allowed to make seeds in a flower-garden soon loses the character for which it is grown, and if it be an annual, as the Stock in question, the season is soon over with it, unless the seeding parts are cut away as fast as they appear; therefore, we are compelled, as it were, to keep such edgings clipped. *Sweet Alyssum* is another of the same class; also, the *Silene pendula*, with its bright pink blossoms, is as good an edging plant as any we have, and where it is grown half-wild in patches on a bank or mixed border, a little care in cutting out the seed-shoots will keep it in bloom the whole of the season without ever appearing as being cut and clipped. Whoever can manage to keep a row of *Mignonette* in bloom from May to October will be able to keep this *Silene*, also, the whole time; for they require exactly the same kind of treatment in every other respect, as well as in pruning. Either may be sown in the open ground from January to September; no ground can be too rich for them, and they will succeed very well in the driest, thinnest, and poorest soils. They require to be well thinned out before they begin to flower, and when they are in bloom both of them will ripen seeds on the bottom of a shoot long before the top part has done flowering; then the rule, by which they are kept on their legs the whole season, is to go over the plants once in ten days or so, and to cut away every shoot as soon as one-third of its length is in seed; and in gathering *Mignonette* for bouquets or glasses, that is the stage at which it ought to be cut. Never cut *Mignonette* when it is just coming into flower, but always select those branches of it which have a lot of seed-pods at the bottom. The pods are easily got rid of by passing the parts between the fore-finger and thumb; but remember that whether *Mignonette* is wanted for cut-flowers or not, it must be thus cut all through the season, and it is just the same with the *Silene pendula*; there is only one instance in which the two differ in the least: *Mignonette* is bad to remove from place to place; it does not like transplanting; but the *Silene* may be transplanted with the greatest ease in any stage of its existence, when in full flower as well as when in the "rough leaf" from the seed. As an edging it, and the *Virginian Stock*, will bear clipping as well as box or yew.

Petunias should be cut in, shoot by shoot, as soon as the whole bed is well covered, and the branches interlace into one compact mass; then they never look as if they were clipped. At the first going off some of the *petunia* plants will grow much stronger than the rest, and such

ought to be stopped as soon as their habit is perceived; otherwise the bed will look in waves, or in hills and hollows, always a sign of neglect. The whole should be so managed that they would appear to a stranger as if every plant in the bed was exactly of the same strength, and that the knife had never touched any one of them. About this time, that is, as soon as a *petunia* bed is got into this regular shape all over, is the right time to support the plants throughout the bed, by placing small sticks at regular distances among the plants. These sticks should be sufficiently low to be covered by the leaves so as not to be seen; this plan is not necessary in all places, only where the situation is exposed, and where the plants are liable to be blown about by high winds. Wherever *petunias* grow rank, however, it is a safe plan to stick them, as they are liable to be beaten down by heavy rains in the autumn.

Salvia patens and *Dahlias* that are to be kept low by training them down to the surface, should be begun with as early as the shoots are long enough. Here and there the central stem of these *salvias* shoots up rapidly, and long before others; but such ought at first to be stopped, so as to get four or five from the very bottom, as if they get long they are not so easily trained afterwards. The other blue *salvia*, *S. chamædrioides*, should be trained down to the very surface of the ground from their first growth, like *verbenas*, otherwise a bed of them soon gets untidy. This is the bed in which the blue *Nemophila* tells so well in June and July, as the *salvia* does not make much of a show till late in July, when the *Nemophila* is nearly over.

The *American Groundsel* ought to be guarded with sticks like the *Petunia* in all exposed places, as it is very apt to be broken or blown about with high winds.

All the *Lupines*, but particularly the large ones, as *Hartwegii* and *mutabilis*, should now have the centre shoot stopped, so as to get the plants bushy from near the bottom. I never heard of any one training these *lupines* down to the ground like the blue *salvias*; but I think if they were begun in good time they would answer well that way, as they would readily make side shoots along the whole length of the main stems.

It is not often that one can find time to do much in the way of training with any of the breeds of *Scarlet Geraniums*; but small beds of them, from very young plants propagated on purpose for low beds, may be assisted to keep low by going over the plants just now, and pinching out the centre buds just above the last flower-stalk; this plan would increase the size of the individual flowers, and cause the plants to break into more shoots lower down. I have often managed some of them that way, and kept a bed within bounds that would otherwise get too high, or top-heavy as it were; and from what I have seen of them, I am of opinion that where *scarlet geraniums* get too much to leaf in the autumn, that this way of stopping, with a little thinning of the young shoots from the bottom, is the best and safest cure for them. To pick off lots of their largest leaves every time one has to regulate the bed, is the next best plan of hand management; but shallow, poor soils are the fundamental cure for them and all other plants which run too much to leaf, and do not blossom freely. In our dry soil here, with our high situation, our *Geraniums* are at their best in September and October, and they are then so firm and ripe that early frosts never injure them.

D. BEATON.

GREENHOUSE AND WINDOW GARDENING.

A FAGGOT OF TRIFLES.—"AIR give as freely and as plentifully as you can," is a rule you will find in almost every authority upon gardening, as respects our fa-

vourites of the greenhouse and window, during these hot days in the end of June, when cultivators and cultivated alike are *basking* in the fierceness of a cloudless sun. As a general rule, the proposition is admirable, and beneficial will be the result of attending to it, *provided* our cultivators keep in mind that there is scarcely a general rule but has its *exceptions*; and that these exceptions, if not too numerous, instead of nullifying, give strength and validity to the rule. Success, then, will not altogether depend upon knowing a rule. Are there exceptions to it? Does the present instance constitute an exception? are questions which the would-be-successful gardener must be prepared to answer. Hence, I and other contributors have united in speaking of times when plants are to be kept *close* to encourage fresh growth, and that afterwards air and light are to be admitted freely, but gradually, to consolidate and ripen that growth. Even at the present time, in very hot sunshine, and perhaps a brisk breeze blowing, supposing that the plants were in such a condition, that with respect to them, "give air liberally," should be perfectly applicable; yet, where a great number of plants were kept, we would, in such circumstances, merely as a matter of *economy* as well as *safety*, keep the plants *closer*, and very likely *shaded* too, during the heat of the day, preventing thus a *too* rapid decomposition of carbonic acid and assimilation of organised material, and a more frequent recurrence to the water pail than might be desirable. To counteract any *drawing* tendency from this closeness and shade for several hours during bright days, we would give all the air and light possible mornings and evenings, and all the air possible for such plants at night. In fact, *coolness*, and a free circulation of air at night, neutralize the tendencies produced by the close, warm, moist atmosphere during part of the day; while the advantages are, that insects are snubbed in their first attempts to establish their colonies, the plants run no risk in unpractised hands of being dried and shrivelled like mummies, for want of the moisture to meet the prodigious evaporation, nor yet of being rendered gouty and diseased by the often-repeated drenchings during the day with cold, unexposed hard water, obtained from the spout of the nearest pump. The smaller the pot, the redder its colour (unless indeed it were black), and the more exposed to the sun it be, the hotter will the soil and roots become, the more rapidly will moisture be lost by evaporation, and the oftener must these waterings be given, and, therefore, the greater the necessity for having it warmed and aired to give no checks to the system. As a safe-guard, therefore, against contingencies, as a matter of economy in time and labour, it is often advisable to reduce the air for several hours in these hot, sunny, drying days, and give the plants, instead of so often repeated waterings, a moist atmosphere by sprinkling floors, stages, or even the window sill. Plunging the pots in moss, or other non-conducting material, would also be an additional means of economy and safety.

SHADING.—In my younger days, when planting out celery plants, we docked off a number of leaves, to prevent flagging afterwards; we shaved off the points of our pink pipings for a similar purpose; and reduced the leaves of all cuttings on a similar principle. A great hubbub was created among some of our young minds when a great gardener, now no more, demonstrated in the Gardeners' Magazine, that *leaves* were the prime movers in the formation of *roots*; that stripping these leaves from a cutting was worse than labour thrown away; and mutilating a celery plant akin to barbarism. The youngest reader of this work will only require a slight exertion to see through the enigma which distracted us amazingly. He will perceive that as there are *two ways* (and very likely as many more as

there are individuals) of telling a story, so that the same place may be arrived at by many different routes: the old gardener, with his semi-savage lopping propensities was not such a numskull after all. He often did the best with his limited means and conveniences. He knew that fine healthy leaves could only be sustained by roots in full action, and with abundance of moisture within reach. He knew that, generally speaking, neither cuttings, nor celery plants, unless peculiarly well-treated, could at once possess the roots in action necessary to sustain transpiration and elaboration through so many fine leaflets, when these were exposed to solar agency. One sweep of his trusty knife lessened the number of these *robbers* of the stored-up energies in his plant or cutting, and saved him many a jog-trot afterwards, for seeing if all his shading-from-sunshine paraphernalia were put on and removed at the right and proper period. His lessening the number of his leaves lessened the chance of obtaining, quickly, a sturdy, healthy plant, if the necessary attention to securing a moist atmosphere, and shading from sunshine could have been attended to; but then he marvellously lessened his cares and trouble respecting them, so that though he lost in *time* he saved in *labour*. He knew that these leaves evaporated; if he did know how, he had not the means to prevent them, nay, of making them *absorb* as well as *perspire*.

I have headed this article with "*trifles*," but not without a meaning. A *great* job may be done to-day, another *great* job set about to-morrow, and one and both may be done well; and yet the garden, whether consisting of a few feet on the window sill, or ever so many acres around a mansion, may exhibit proof of *want* of method and order, nay, even of success, because *trifles* were too little to be attended to. Many other capabilities there may be to rivet our attention, but where *trifles* are neglected, no man can exhibit the portraiture of good gardening. It is not necessary that we should follow in one beaten track, even though that be the very best discovered. The best gardener is he who suits himself to his circumstances, and makes the utmost possible of them. Studying trifles he may do things very differently from his next-door neighbour, and yet, at the end of a few months, a spectator who had never witnessed these operations would imagine they had been working all along in a similar manner. Thus tested, many new discoveries and seeming differences would resolve themselves into looking at an object from different points of view. The pages of this work furnish confirmations strong, though we cannot now allude to them. Go beyond, and what is more commonly found than this: "Shade everything in bright sunshine in summer," says one. "Nonsense," says a second; "Shade not at all; how can you expect your plants to be worth anything, if they receive not the *full* blaze of our sun, which even then is not so powerful as that to which our exotics are generally exposed in their own climes." "Shade according to the circumstances of your plants, and your requirements from them," says a third; and with him we coincide; and, if you cannot shade, use other means, such as sprinkling or syringing, to prevent evaporation, and maintain a certain degree of coolness. "Shade ever," in bright sunshine in summer, is just as preposterous to us as "never shade at all." Thus, here are a number of cuttings with all their leaves on protected from the atmosphere by bell-glasses, and enclosed besides in a pit or frame: allow them, even in these circumstances, to catch the full force *now* of a Midsummer sun; and, unless in exceptional cases, arising from the nature of the cutting, the leaves will droop, because they cannot derive moisture enough from the cutting to supply the outgoing from their evaporating surface;—continue a similar process from day to day, and death will ensue from complete exhaustion.

On the other hand, place your shading on and

continue it on, and, as in the other case, exclude the atmosphere by your bell-glass, and you will find that the cutting does not flag at all; anon, it seems to increase in length, and you are already dreaming of your success; when lo, and behold! some fine morning you find it has gone at the surface of the soil, and not one single root, or an attempt to form one has been made; it having resolutely refused to do the very thing you wished it to do. The little food within its reach you have taken care it shall neither digest or assimilate, as that can only be done in light. The general rule then is, give shading to prevent a cutting, or a newly potted plant from drooping. That effected, accustom it by degrees first to subdued, and then to direct light and air, as soon as it can bear it without flagging, that fresh matter may thus be assimilated, and be expended in roots and leaves. Again, I have spoken of reducing air in extremely hot weather, in the case of plants growing. It is better to shade, and give beneath that shade as much air as possible, unless the weather is breezy, when we wish to retain them in bloom as long as possible. Another season when a shade for a few hours is of great advantage, is when, after a period of dull weather, we have at length a day of brilliant sunshine; many plants and forced fruits have been injured for the season, by not attending to this; when used to it by degrees, they will then stand any sun with impunity. Of course, unless in very extreme cases, such as these, we should never shade, when our object is to consolidate and ripen the wood or stems of a plant.

The neatest and best mode of shading houses and pits, is to fasten bunting or canvass to the top of the house, and then to a wooden roller in front, the roller being furnished at the end with a wheel, containing a groove for holding a rope rather more than the length of twice the width of the house. The cloth being let down, and the rope wound round the wheel, the pulling of the rope causes it to revolve upwards, and you can fix your blind in any position, by twisting the rope round a pin in front. For growing and flowering plants a nice temporary shading may be given, by dissolving a very little whitening in a pail of water, and spirting it over the glass with a syringe. A man used to it will do 100 square feet as soon as I can write a couple of these lines. The first shower removes it. To make it last the summer, it must have a portion of size, and be laid on with a brush. Do not use lime; it is no friend to glass or paint. The best and neatest *continuous* shade for the summer months, is made from double size, obtained in the shape of a jelly. This dissolved over a fire in an iron pot, with a very little, or no water added, and put on when hot by dipping the point of a brush in it, and then quickly daubing it on the glass. At a few feet distance it will not be noticed, and yet for most things it will be sufficient shade. Hot water must be used to remove it in autumn.

R. FISH.

HOTHOUSE DEPARTMENT.

EXOTIC STOVE PLANTS.

PLANTS WITH VARIEGATED-LEAVES—(Continued from page 180).

MARANTA ALBO LINEATA (White-lined M.); New Grenada.—Leaves six inches long, ground colour purplish green, with pure white lines running upwards in a slanting direction. Few variegated plants are more elegant than this. It is a new plant, the flowers of which we have not seen as yet. There is a variety, the leaves of which are striped with rose-colour; but it often varies to white, and, therefore, we are inclined to think they are both one species, the different colouring being only accidental. Requires the warmest part of the

stove. Increased by division. *Soil*.—Sandy loam and peat, with a small admixture of leaf-mould and sand.

M. BICOLOR (Two-coloured M.); Brazil. This is a very pretty, low-growing plant, well worth cultivating for its beautifully-shaded leaves. Culture the same as the last.

MUSSENDIA FRONDOSA (Leafy M.); Ceylon.—The chief beauty of this plant consists in its striking white bracts, or floral leaves. These appear, generally, in threes, just underneath the small heads of bright yellow flowers. The contrast exhibited by these pure white leaves, the dark green foliage, and the bright yellow flowers, renders it a very attractive plant even among more splendid things. The coolest part of the stove suits it best. Increased by cuttings placed under a bell-glass in heat. *Soil*.—loam and peat in equal parts, with a free admixture of silver sand.

NEPENTHES (Pitcher plants).—Though the leaves of these interesting singular plants are not variegated, yet as the pitchers form parts of the leaves, we might with propriety have introduced them here; but as they form an important class of stove plants, we shall devote a chapter or two to them alone.

PANDANUS UTILE VARIEGATA (Useful variegated P.). The species *P. utile* itself has fine foliage, with a shade of crimson on the edges and under surface; but the variegated variety is a truly beautiful object; the leaves are long and elegantly drooping, they are striped alternately with white and green. It is a quite new and rare plant in our stoves. If a bark-bed is in the plant stove, this fine plant will thrive best plunged in it. Increased by cuttings made from side-shoots, which are sparingly produced. Place them in a pot under a tall bell-glass plunged in heat. *Soil*.—Sandy loam, peat, and leaf-mould, in equal parts.

PAVETTA BORBONICA (Bourbon P.); Isle of Bourbon.—Very similar to *Eleodendron indicum*. The leaves are large, of an oval shape, are spotted with larger white spots than *E. indicum*; the green is much brighter. Culture the same as the *Eleodendron*.

POINSETTIA PULCHERRIMA (Handsome P.); Brazil.—The bracts, or floral leaves, are of the most brilliant scarlet, and form a whorl on the summit of the shoots just under the real flowers, which are small and yellow tipped with scarlet. A beautiful object, especially by candlelight. The whorl of bracts sometimes measures nine inches diameter. It requires a season of rest and a season of growth. The resting season commences as the flowers decay; then gradually reduce the water, and when the leaves turn yellow cut the stems down to within six inches of the pot; give no water, or at least no more than is absolutely necessary to keep the plants alive. Place them in a house where the heat is not more than 50°, nor less than 40°. This season of rest should take place in winter. In March repot them, rubbing off the greater portion of the old soil. Place them in a gentle heat, giving but small quantities of moisture till the shoots are an inch or two long, then increase the quantity as the plants require it, and when two feet high give liberal supplies. In August they will produce their splendid scarlet-coloured bracts, and are then very ornamental. *Soil*.—A rich compost of loam, peat, and rotten dung, in equal parts. It is propagated by cuttings of the young shoots, or by eyes from the old shoots, placed under bell-glasses in heat, in sand with some of the compost under it. There is a variety with white bracts which is equally ornamental, and requires the same treatment.

RUELLIA MACULATA (Spotted R.); Brazil.—A plant with leaves of a light green, beautifully blotched in the centre with silvery white. *Culture*.—Requires the cool part of the stove. *Soil*.—Loam, peat, and sand. Increased readily by cuttings placed under a hand-glass in heat.

TILLANDSIA SPLENDENS (Splendid T.); Brazil.—A very ornamental plant. It has much the appearance of a small broad-leaved pine-apple plant. Indeed, it belongs to the same natural order, Bromeliaceæ. The leaves are splendidly and broadly barred with rich purple. The flower-stem springs from the centre of the plants. It is clothed with rich scarlet bracts, out of which the flowers spring; these are of a creamy white colour; when in flower there are few objects more ornamental. *Culture*.—Where a bark-bed is convenient the plants should be plunged in it, and in that situation will thrive well. This is not, however, indispensable, they will flourish very well if placed upon a platform, or on a stage in the usual way, amongst other stove plants. *Soil*.—A rich compost of loam, peat, and well-decomposed leaf-mould or dung, in equal parts. *Propagation*.—Sometimes seeds are produced, and by that means they may be increased plentifully. Sow the seed as soon as it is ripe in shallow pots, covered lightly, placed in the warmest part of the stove. When they grow transplant them in the smallest-sized pots, and repot them as they require it till they flower. *By Suckers*.—Like their prototype, the pine-apple, they will, after they have bloomed, send forth suckers. When these are long enough to take them off plant them in small pots, and place them under a bell-glass, or hand-light, upon a bottom-heat, and as soon as roots are emitted repot them, and grow them on in the same way as the seedlings.

TRADESCANTIA DISCOLOR (Two-coloured T.); South America.—This is a pretty green and purple leaved trailing plant, which may be made use of to grow in baskets and suspend from the roof. Or the roots may be wrapped in a bundle of moss, and the plants allowed to hang down from the roof. Increased easily by the young shoots laid upon any moist, shady, warm place.

T. APPLEBY.

FLORISTS' FLOWERS.

MR. GLENNY ON FLORISTS' FLOWERS.

CALCEOLARIAS (*Amelia*).—It is a pity that amateurs desirous of raising seedlings have to trust to seed-shops, or save seed themselves. Of all our fair correspondent's prettily-coloured Calceolarias, there is not one we can honestly recommend. *B. M.*—Not one without that melon-shaped rib and swelling that renders hundreds good-for-nothing.

PETUNIAS (*J. B.*)—Fine colours, but flimsy, not one an advance on those we have.

ANTIRRHINUMS (*Thomas Read*).—The only one worth mentioning is *B. 36*, and that not first-rate; stand two yards off and there is no character. It is pretty like *Corypholoides*, but the stripes lighter. The striped varieties are all very far from good.

MIMULUS (*B. C.*).—There are many better than the best, which is the one marked *D. 17*. Seed from the cream-coloured one, *H. 45*. It may produce novelty if removed from all the commoner varieties.

PANSIES (*H. B.*).—The size is, generally, too great to be useful, even if they were not all so exceedingly thin. No. 4 is the best, but too flimsy to be useful. The striped one, No. 1, is novel; but Mr. Salter, of Hammersmith, has a dozen varieties of the same school all far better.

DAISIES.—We cannot regard them as a florists' flower. They are pretty, and would please children. *A. M.* will be tired of them in another season, and they will spread like a weed.

CALCEOLARIAS (*G. L. Ormiston*).—All very pretty, but very faulty. No. 1 is the fullest and best, and No. 8 the largest that has any approach to form.

PHLOX DRUMMONDII, from the same party, very good.

Those of so round a form should be removed from the rest, or the less circular ones be removed from those, that the seed may not be damaged by impregnation. It is not enough to mark the best for seed, unless we get rid of all the inferior in their neighbourhood. G. G.

FLORISTS' FLOWERS CULTURE.

THE CALCEOLARIA.—Although this is not a general florists' flower, requiring, as it does, a greenhouse to bring it to perfection, and on that account can only be cultivated by such of our readers as may be happy enough to possess such a convenience; yet, for the instruction of those, we think it our duty to lay down such plain, practical rules for their guidance, as may render their culture easy for the "million." They are, when well-grown, as interesting and beautiful as almost any other flower of the class. Witness the fine specimens exhibited for several years at the grand Metropolitan exhibitions.

First, let us offer a few words upon their *characteristics of excellence*. *Form*.—This is the most important of all. If a flower have every other property in the highest degree, and be deficient in form, it is of no use as a show flower. It should be a complete circle, without any indentation on the edges; the upper part should rise well up so as almost to hide the throat; this should be small. The cowl or head should be of a medium size, neither too small nor too large, but well-proportioned: it must not stand so high as to destroy the general circle of the whole flower. The *size* should be not less than one-inch diameter. The *colours* should be clear and distinct; if a blotch in the centre, the ground colour should surround it equally all round. The blotch should never run down to the edge at the lower part. If the flower is a spotted variety the spots should be well-defined, if gathered in a circle in the centre of the flower, with the ground-colour running in a broad ring round the spots, the variety will be the more perfect and valuable; but this is not indispensable, the spots, if well defined, may cover the whole surface of the flower. The *plant* should have large, healthy leaves, covering the surface of the pot, and rising up amongst the flower-stems. Florists should aim at obtaining varieties with shrubby-stems. Unfortunately, hitherto, the best varieties are of, as it is termed, the herbaceous class, and then are more difficult to keep and propagate than the shrubby varieties. This might be overcome by impregnating the shrubby varieties with herbaceous ones, and so obtain a more hardy progeny.

Propagation. By Seed.—Save this from such as have been impregnated in the manner hinted at above. The best time to sow it is in June. If sown earlier the plants will be apt to show bloom in the autumn, and will thereby be much weakened; if sown later they will be too weak to pass safely through the winter. Sow them in wide, shallow pots in a rich, light compost of loam, and well-decomposed leaf-mould; sift the portion on the surface through a fine sieve; drain the pot well; level the surface with a flat, smooth piece of wood, and sow the seed rather thin. If sown thick they are liable to damp off. Cover the seed as thinly as possible, and water with the finest-rosed syringe or water-pot, allowing the water to fall upon the soil almost like a shower of dew. If the soil is very dry it is desirable to give it a gentle watering before sowing and covering the seed; place the seed-pans on a shelf near the glass, shading them from hot sunshine. Give water whenever the surface appears dry, using the same fine-rosed syringe or pot. The seeds, if good, will soon grow; and when the plants are fairly above ground allow them more air and light; keep them just moist enough to prevent flagging. As soon as they are large enough to handle, transplant them into the same kind of pots; shade again

for a time till fresh roots are formed, to enable the plants to bear the full light. They will, with moderate supplies of water, grow freely, and will soon require potting off singly into small pots. They will grow best after this potting in a cold frame, set upon coal-ashes pretty close to the glass.

Cuttings.—When the seedlings are in flower, select such as possess the desirable properties described above, mark and name them, and describe them in the book kept for that purpose. After the bloom is over, or sooner, if an early increase is desired, cut down the flower-stems, to allow the plants to produce cuttings. Take these off as soon as they are three inches long, reduce the leaves to two or three, according to the strength of the cutting; cut off the lower leaves with a very sharp knife, and let the cuttings lay exposed to the light, but not to the sun, for an hour to dry the ends and wounds made by cutting off the leaves. Whilst that is taking place, prepare the cutting-pots. First, fill them half full of broken crocks or potsherds, then place a thin covering of moss upon them to prevent the soil from choking up the drainage; after that fill the pots with light compost, formed with fibrous light loam two parts, and well-decomposed leaf-mould one part, adding a liberal amount of silver-sand, cover this with about half-an-inch of the pure silver-sand, give a gentle watering to make it firm, and allow it to stand a short time to dry the surface. Then, if the hour has expired, plant the cuttings round the edges of each pot, but not too thickly; one inch, at least, should be between each cutting.

Situation of the Cuttings.—The propagating-house, where there is such a convenience, is, of course, the right place for them. At Pine Apple Place we have one built on the best principle, with a tank for bottom heat, and pipes to cause a dry atmosphere. Within this house there are small frames covered with glass, set on a bed of ashes over the tanks. Within these frames the cuttings are placed, and in such a quiet, moist atmosphere they strike astonishingly quickly. But every one desirous of propagating Calceolarias may not have such an excellent convenience; they need not, however, despair, but may place the cuttings in a cool frame, and cover them within the frame with a handlight. To prevent them damping off, cover the surface upon which the cutting-pots stand with dry coal-ashes. These will absorb the extra moisture, and keep the damp from injuring the foliage. If this convenience is not at hand, place the cuttings under handlights in the greenhouse itself, shading them effectually and closely at first till they show symptoms of growth, when a little air may be given and less shade used. Cuttings may be struck even in the open air under handglasses; but this is a rather uncertain mode, and only to be followed when no other convenience can be had. Directly they have formed roots pot them off singly into small pots; keep them close for a few days till fresh roots are formed, when they should be gradually hardened off.

(To be continued.) T. APPLEBY.

FLORISTS' FLOWERS AT CHISWICK, JUNE 7TH.

ROSES IN POTS.—These were shown again in undiminished splendour. The amateurs especially showed even improved specimens, both as regards growth and bloom.

COLLECTIONS OF 12. First prize, Mr. Terry, gardener to Lady Puller, of Youngsbury, Herts. Second prize, A. Rowland, Esq., of Lewisham. Third prize, Mr. Rosier, gardener to J. Bradbury, Esq., of Streatham. Mr. Terry had nice plants of *Baronne Prevost*, *Coup d'Hebe*, *Colonel Coombs*, *Eliza Sauvage*, *Charles Duval*, *Chénédole*, *Œillet Parfait*, *Mrs. Bosanquet*, *Sophie de Marcilly*, *Souvenir de Malmaison*, and *Robin Hood*. Mr. Rowland had very fine *Blairii* No. 2, *Chénédole*, and *Souvenir d'un Ami*.

COLLECTIONS OF 12. Nurserymen. First prize, Mr. Lane, of Berkhamstead. Second prize, Mr. Francis, of

Hertford. Mr. Lane's collection was really fine; besides the above he had *Celine*; and Mr. Francis had very fine *Belle de St. Cyr*, *Reine du Vierges*, *Duc de Cases*, *William Jesse*, &c. Mr. Francis had a Collection of *Six Yellow Roses*, or rather approaching to yellow; they consisted of *Eliza Sauvage*, *Williams' double Yellow*, and single, *Smith's Yellow Noisette*, *Harrisonii*, and *Yellow Banksia*.

PELARGONIUMS.—The *Amateurs* did not exhibit; the cause is rather a mystery, but it was generally bruited that it was owing to the Society offering diminished prizes. The *Nurserymen* showed in pretty strong numbers. Mr. Guines, Battersea, obtained the first prize for 12, in 8-inch pots. The best were *Aspasia*, *Centurion*, *Firebrand*, *Mont Blanc*, *Mars*, *Negress*, *Prince of Orange*, *Painted Lady*, *Salamander*, and *Star*. Second prize, Mr. Bragg, Slough, for *Conspicuum*, *Gulielma*, *Forget-me-not*, *Knight of Avenal*, *Lord Gough*, *Narcissus*, *Napalese Prince*, *Norah*, *Roseum elegans*, and others.

COLLECTIONS OF NINE, in 11-inch pots, were shown in capital condition, by Mr. Chapman. First prize, for *Adonis*, *Camilla*, *Duke of Cornwall*, *Emperor*, *Forget-me-not*, *Luna*, *Negress*, *Rosy Circle*, and *Salamander*. Second prize, Mr. Gaines, besides others mentioned above, had *Marion*, *Orion*, *Rosamond*, and *Xarifa*.

FANCY PELARGONIUMS.—First prize, for six distinct varieties, Mr. Ambrose, Battersea, for *Cleopatra*, *Defiance*, *Formosum*, *Fairy Queen*, *Modestum*, and *Reine de France*. Second prize, Mr. Baines, for *Hero of Surrey*, *Madame Rosati*, *Odorum*, *Orestes*, *Magnificence*, *Lady St. Germain*. Third prize, Mr. E. G. Henderson, Wellington-road, for *Alboni*, *Annette*, *Mrs. Loudon*, *Prima Donna*, *Princess Marie Galitzin*, and *Victoria*.

CALCEOLARIAS, in collections of 12, were good, and showed great skill in cultivation. First prize, Mr. Franklin, gardener to Mrs. Lawrence, for *Admiral*, *Alonzo*, *Bridal Ring*, *Earl of Rosslyn*, *Elegans*, *Goldfinch*, *Grandiflora*, *Isabella*, *Lord Byron*, *Lucy Ashton*, and another. Second prize, Mr. Chapman, Turnham Green, for *Alpha*, *Cavalier*, *Cardinal*, *Cleopatra*, *Crocus*, *Florabunda*, *Keepsake*, *Marion*, *Prince of Wales*, *Sappho*, *Sidonia*, and *Success*.

PANSIES IN POTS.—The showing of these flowers in pots, thus exhibiting the habit and foliage, is certainly an improvement upon the old method of showing them in stands. On this occasion they were shown in good condition. First prize, Mr. Francis, Hertford, for *Aurora*, *Androcles*, *Duke of Norfolk*, *Marchioness of Lothian*, *Mrs. Beck*, *Juventa*, *Lucy Neal*, *Miss Edwards*, *Penelope*, *Purity*, and *Supreme*. Second prize, Mr. Bragg, for *Clotno*, *Industria*, *Junius*, *Lucidum*, *Lucy Neal*, *Madame Sontag*, *Magnificent*, *Queen of England*, *Snowflake*, *Lucidum*, and two seedlings.

PINKS IN POTS.—These made but a poor appearance in pots. The flowers were individually good, but they were not sufficiently numerous in each pot to be attractive. They consisted of *Coronation*, *Harry*, *Jenny Lind*, *King of Purples*, *Laura*, *Lola Montes*, *Lord John Russell*, *Merope*, *Morning Star*, *Oxoniensis*, and *Village Maid*. These came from Mr. Wilmer, Sunbury, who had a prize awarded to him for them.

RANUNCULUSES.—A very fine collection of 30 cut blooms came from Mr. Costar, Benson, Oxon. First prize was deservedly awarded to them. The sorts were *African*, *Atlas*, *Apollo*, *Alice Maud*, *Cedo Nulli*, *Delectus*, *Dr. Lindley*, *Eliza Cook*, *Gentoo*, *Joseph Paxton*, *Lady Sale*, *Lord Gough*, *Maria*, *Mrs. C. Turner*, *Mr. Shelley*, *Mr. Tyso*, *Mr. Holland*, *Medora*, *Naxara*, *Regalia*, *Squire Devenish*, and *Victoria*.

SEEDLINGS.—Very few were exhibited. The most remarkable was a *Heath* from Messrs. Henderson, Pine Apple-place, named *Erica grandis*. The habit of the plant was that of *E. vestita*; the flowers tubular and verticillate: that is, set in a circle round the stem; the colour orange-scarlet, approaching in colour to *E. splendens*. This will be a useful variety. Mr. Thomas Kempster, Blackheath, exhibited an interesting *Pelargonium*, a hybrid, between some fancy variety and the old *P. citriodorum*. This is a step in the right direction; we want sweet-leaved geraniums, with large and more attractive flowers.

CAPE HEATHS.

There were eleven collections, containing 168 plants. We can only notice a few of the very finest.

- ERICA AMPULLACEA VITTATA (Cole), 2 ft by 2 ft.
 — BERGIANA (Cole), 2½ ft by 1½ ft.
 — BRUNIOIDES (Smith), 1½ ft by 2 ft.
 — CAVENDISHII (Smith), 4 ft by 3½ ft, a splendid, extra-bloomed plant. (Fairbairn), 3 ft by 3 ft. (Cole), 2½ ft by 2 ft.
 — DEPRESSA (Rollison), 2 ft by 1½ ft, finely bloomed.
 — DENTICULATA MOSCHATA (Taylor), 2½ ft by 2 ft, a well-grown plant.
 — DELECTA (Smith), 3 ft by 2½.
 — ELEGANS (Rollison), 1½ ft by 2½ ft. (Fairbairn), 2 ft by 2 ft.
 — FLORIDA (Rollison), 2 ft by 2 ft, a beautiful heath.
 — HALICACABA (Cole), 2 ft by 1½ ft.
 — HUMEANA (Fairbairn), 3 ft by 3 ft, a large heath.
 — JUBATA (Rollison), 1½ ft by 1½ ft, a fine heath.
 — MELLITIFLORA (Smith), 2 ft by 2½ ft.
 — MUTABILIS (Rollison), 1½ ft by 2½ ft, a dense bush, thickly flowered.
 — ODORA ROSEA (Taylor), 2 ft by 1½ ft, a neat, well-bloomed bush.
 — PERSPICUA NANA (Cole), 2½ ft by 2 ft, well bloomed.
 — PRÆGNANS (Rollison), 3 ft by 2½ ft.
 — SHANNONI (Fairbairn), 2½ ft by 2½ ft, a beautiful heath. (Smith), 2 ft by 2 ft.
 — TRICOLOR (Taylor), 2 ft by 2½ ft.
 — WILSONII (Rollison), 2 ft by 2 ft, a fine variety. (Smith), 2 ft by 2 ft. (Cole), 2 ft by 2 ft.
 — AMABILIS (Rollison), 2 ft by 1½ ft.
 — ELEGANS (Fairbairn), 2½ ft by 2 ft.
 — DUMOSA (Taylor), 1½ ft by 2 ft.
 — SPLENDIDA (Cole), 2 ft by 2 ft.
 — VENTRICOSA BREVIFOLIA (Rollison), 3 ft by 3 ft.
 — MAGNIFICA (Rollison), 2 ft by 2 ft, a splendid variety.
 — ALBATINETA (Fairbairn), 3 ft by 3 ft.
 — COCCINEA MINOR (Fairbairn), 1½ ft by 2 ft. (Taylor), 2 ft by 2 ft. (Cole), 2 ft by 2½ ft.
 — GRANDIFLORA. The best variety of this species. (Smith), 2½ ft by 2 ft. (Cole), 1½ ft by 2 ft. (Taylor), 1½ ft by 2 ft.
 — VERTICILLATA (Smith), 2 ft by 2 ft.
 — VERNONI TUMIDA (Cole), 2 ft by 2½ ft. (Fairbairn), 1½ ft by 2 ft, a beautiful species.
 — WESTPHALINGII (Taylor), 2 ft by 2 ft, highly coloured.

MISCELLANEOUS.—Under this head Mr. Ivison, gardener to the Dowager Duchess of Northumberland, Sion House, Isleworth, exhibited a very interesting group of *Exotic Plants*, bearing ripe and unripe fruit. It consisted of the *Nutmeg*, *Gamboge*, and *Vanilla aromatica*. The *Cinnamon tree*, 12 feet high, was in flower, and there were specimens of dry cinnamon produced in those gardens. A curious object amongst this interesting exhibition was a plant of the *Snake Cucumber*, with several of its singular long fruit hanging down, one or two measuring near six feet.

There has been lately introduced into English gardens a great number of varieties of THE COMMON DAISY (*Bellis communis*). A sample of them was exhibited by Mr. Salter, of Hammersmith; amongst them we selected a few as worthy of notice, namely, *Amelie Winter*, *Bacchus*, very double, *Charlotte*, *Coquette*, *Leontine*, *Jupiter*, and *Decora*.

THE KITCHEN-GARDEN.

ANGELICA.—If intended to remain where sown in spring, thin out the plants, and encourage those that

are to remain by maintaining an open, loose surface, and occasionally applying liquid-manure. If to be transplanted, take up the plants carefully with the trowel or spud, plant them on a good preparation, and treat them in the same way.

ASPARAGUS, — As previously recommended, should meet, in every stage, with liberal attention. If an open surface is maintained about it throughout the summer no weeds will have the chance of making their appearance; and if frequent sprinklings of salt are applied, a sure foundation is laid for the following season's luxuriant produce. We have observed, in too many instances, after the cutting season is over, that weeds have been allowed so to accumulate seed, and rob the soil, that in autumn, when the time arrives for cutting down the stalks, the seeds of the weed get thrashed, sown, hoed, and raked into the ground, so as to be in readiness for appearing in due season, and not only robbing the next year's produce, but stocking the rest of the garden with weeds also.

ROUTINE WORK.—Plant out *Celery* in succession, and encourage the growth of all that is already planted. Sow *Endive* and *Lettuce*. Plant out *Leeks* in full crop; *Turnips*, also, in full crop. Take every available opportunity of getting out the winter crops; do not allow a spot of ground to remain uncropped, or a weed to be seen; use every available article that cannot be turned to better account for manure. Where good order, with economy, is the order of the day, a *manure-pit* will always be seen as a general receptacle for all sweepings, rakings, trimmings, and refuse of all kinds, as well as the soap-suds from the washhouse, and all house-sewage. Where a pig or cow is kept the drainage of these places is also conveyed to the same place. Dust or charred-dust, wood-dust, or old tan, or some articles of such kind easily procured are placed in this pit to absorb the accumulation of moisture; if under cover, so much the more valuable. A cask of salt may be kept close by, or in one corner, to dredge it with occasionally; and it is astonishing the quantity of the most valuable manure that may thus be accumulated. When this save-all is to be emptied of its contents, if a piece of ground is not in readiness to take it, so as to be at once trenched in, it should be placed on some soil or rubbish to absorb its juices, and at once be covered over with earth to prevent evaporation.

JAMES BARNES.

MISCELLANEOUS INFORMATION.

THE DOMESTIC PIGEON.

DISEASES. (Continued from page 200).

THE SMALL POX is very rare in doves, situated in temperate or cold climates; but in hot climates, especially in Italy, it is very common. In a dovecote of a hundred pairs of pigeons, there are frequently as many as ninety attacked with it. This disease consists in a cutaneous eruption, which covers the whole body with pimples, very much resembling those of the small pox, from whence it takes the name. It is incurable by art, but nature generally cures it; and even when no trouble is taken about it, it seldom destroys more than a twentieth part of those attacked by it. The only means known to prevent this complaint, is to keep the pigeon-house extremely clean.

THE WRY NECK is an hereditary complaint among pigeons. We believe it to be produced by a great weakness of sight, from the fact that the eyes of those attacked with it are of a rose colour, and transparent. In this state the animal continually turns its neck in a disagreeable manner. As long as the disorder does not make any progress, the

bird may live and lay, but it frequently happens that the vertigo unites with this disorder, and causes instant death.

EPILEPSY is frequently the sequel to the wry-neck. The bird, taken with painful convulsions turns its head, so that the under part is sometimes turned upwards, whilst the top touches the earth; its cries become much louder when touched. If the disease increases, there is no hope of the animal's recovery, because the fits become more frequent, and of longer duration, and it can no longer eat; females are more subject to epilepsy than males.

GOUT seldom attacks them, except when old, and then it is incurable. This disease paralyses their feet, and prevents their walking. It appears to be produced, at least in the young, by the insalubrity of a damp dovecote, or a lengthened wet season. We must only look to nature to cure this infirmity; however, we may assist her operations by placing the sick birds in a warm and dry place, and above all, by keeping them very clean.

THE POLYPUS is an excrescence of flesh, which accidentally comes in the throat, grows quickly and suffocates the pigeon. As soon as it begins to appear, it must be cut off with a pair of fine pointed scissors, and its root burnt with caustic. The bird should afterwards be dieted, that is to say, kept entirely on barley; a few grains of salt should occasionally be put into its beak. If the excrescence re-appears, we may know that the operation has been badly done, and must repeat it; but if it appears again the third time, the bird is lost.

DIARRHŒA, or scouring, is almost always the consequence of unwholesome food. If it proceeds from heated grain, which is very rare, but also more dangerous, the bird must have nothing but pure barley; but should it proceed, on the contrary, from tares, or wheat of a bad quality, &c., the animal may easily be cured by giving it good grain. If the scouring has become chronic and stubborn, we must give it a little salt, and let it drink nothing but water with a little alum in it. (To be Continued.)

DESCRIPTIONS OF PIGEONS.

NINTH RACE.

(Continued from page 341.)

WARTED PIGEON (*Columba tuberculosa*).—The birds of this race may be known at the first glance by their long and hooked beak, the very large lump on their warted nostrils, in the shape of a small mushroom, by the large red fleshy ribbon which they have round the eye, by their large size, and by the extraordinary length of their throat and feet. The greater part of this race are extremely fruitful, but they are naturally wild, untractable, and never become thoroughly tame. However cautiously any one enters the dovecote, they all fly out in the greatest confusion, break their eggs, or forsake their nests, and do not return to it again until the indiscreet observer has retired.

THE WARTED PIGEON WITH THE LARGE MUSHROOM (*Columba tuberculosa fungosa*), has a mushroom, or very large tubercle, on the beak; a large red ribbon round the eyes, forming, when the bird is old, a sort of second eyelid, fleshy and reddish, which falls over its eyes, and prevents its seeing. These ribbons are sometimes so large that they join on the top of the head, the beak is curved and hooked, and the eye black. This bird is heavy, high on its legs, large and short in the body; the neck is thin and long, the wings short, and feet naked; its breast-bone is always of a flame-colour. It has several sub-varieties, with a plumage black, red, black and white, dun colour, &c. All these produce but little, and with difficulty; consequently it has become very rare, and is merely preserved as an object of curiosity.

THE MIXED WARTED PIGEON (*Columba tuberculosa olorina*) is known in many of the provinces of France by the name of the Swan Pigeon, from whence its Latin name. It differs from the preceding variety in having a smaller ribbon round the eyes, the tubercles of the nostrils not so large, and being smaller in size. It also has a red breast-bone; its plumage is generally inclined to white, or white and black.

BLACK-TAILED MIXED WARTED PIGEON (*Columba tuberculosa olorina nigricanda*), very nearly resembling the preceding, but always having a black tail, of a deeper colour near the end.

BATAVIAN WARTED PIGEON (*Columba tuberculosa Maxima*). Some authors call this "the great Batavian," because they were first brought from Batavia. They also think that this ought to be considered as the origin of the Dove-cote Pigeon, instead of the stock dove. It is larger than the preceding species of this race; thick tubercles, eyelids very fleshy, although less so than in the others, pearl eye, that is with a whitish iris; very long beak, measuring nearly 18 lines in length; neck extremely long, body large and short, very high on its legs, feet of a blood red, long enough to extend a good inch beyond the tail when stretched out. Its step is heavy, and its flight laborious, in consequence of the shortness of its wings, which, moreover, are scarcely covered with feathers, and the prominent bones of the shoulders are left apparently nearly naked. This fine species produces little, and is not much sought after at the present day by amateurs. The cause of their being so little cared for may, no doubt, be attributed to their ungraceful

forms, and the havoc they can make in the dovecotes by destroying the young ones belonging to the other birds,



with their formidable beak. This bird is the largest of all the pigeons, one of them being known tall enough to drink out of a common pail without trouble. (See cut.)

We have seen, at a German amateur's, a pigeon resembling in all respects the "Batavian," except in having no mushroom on the beak or round the eyes.

WHITE-HEADED WARTED PIGEON (*Columba tuberculosa capitata*).—Resembling the preceding, but more esteemed in consequence of its plumage, the lower part of which is the colour of tobacco, and its brown neck surmounted by a white head.

SMALL BATAVIAN WARTED PIGEON (*Columba tuberculosa batava minima*).—Generally resembles the large Batavian, differing from it in being smaller and more productive.

SILKY BATAVIAN WARTED PIGEON (*Columba tuberculosa setacea batava*).—A variety as rare as singular. It resembles the preceding in its figure and chief points, but the barbs of its feathers are long, and thick, and do not adhere together, which deprives it of the faculty of flying. This bird, also, which has not been brought into the market, will doubtless never be multiplied, except by amateurs, who merely consider it a simple object of curiosity.

CROPPED WARTED PIGEON (*Columba tuberculosa curtata*).—Large in the body; less mushroom than the preceding; the ribbons round the eyes not so large; beak shorter than that of the large Batavian, never exceeding fourteen lines; eye pearly; high on its legs; feet surpassing the length of its tail; its plumage is commonly black and white. This pretty bird is very productive, and deserves to be more generally bred.

GREY-HEADED WARTED PIGEON (*Columba tuberculosa cinerea capitata*).—It has a long beak, surmounted with a mushroom; the eye is pearly, and fleshy; the head stout, and the neck long and thin; the body large, short, high on the legs. Its head is of a greyish white, and the rest of its plumage black. This bird produces abundantly, but is excessively wild.

THE SPOT IN PELARGONIUMS.

For some few years past the spot on Pelargoniums has been so great a pest among gardeners, that it appears as if nothing could eradicate it; but experience has proved that even this is to be done. A few months since we had a Pelargonium of a delicate fancy variety so infested with the spot that we thought it useless, for upon examining the young leaves we found them covered with the spot in its

first stage, before it had spread—something like being punctured; we had thought of destroying it, but, by way of experiment, we thought we would try the use of sulphur. The plant was syringed to make the sulphur stick to it, and then sulphured with a pepper box beneath and above every leaf, till it was smothered; indeed, so desperate was the case, that we were determined to kill or cure. It remained so a week or ten days, when we thought it time to see the effect. The plant was syringed again to wash off the sulphur, and we found the disease was completely stopped,—not a spot has been seen upon a single leaf which the plant has made since; nor is this all, for it was the very best plant in our collection of fancy Pelargoniums, which obtained the first prize at our late horticultural exhibition. Does not this prove the spot to be some kind of fungus or mildew, for which sulphur is an unrivalled antidote? at least, it appears to us to be quite conclusive. Here, then, is a remedy simple and effective, with little trouble and less cost.—GEO. GOODWIN, at Geo. Thomas, Esq., Woodbridge, Suffolk.

HARDY SPRING FLOWERS.

YOUR correspondent, S. N. V., has treated on a subject very attractive to those poor folks, who, having no green-houses, and never spending "the season" of all seasons, in London, cannot afford to keep their flower-beds in the proper state of fashionable emptiness. My own half dozen have been as fully furnished for the last three months, as I hope they will be for the next three; and even when the summer plants are only beginning to spread in the middle, the edgings of each are gay with Ranunculuses, Pinks, and Pansies, as you allowed me to describe in your pages last September. As S. N. V. promises more of his instructions, I should not have presumed upon his ground, had he not requested suggestions. He will, perhaps, allow me to remind him of a few useful spring flowers, on which he may give us further information.—*Arabis verna*. I know not why this should not have been much used; it is compact in foliage, brilliant in whiteness, and invulnerable by injury.—*Iberis sempervirens* (Evergreen Candytuft), comes into flower just as the *Arabis* is over, and looks like a snowball till June. It is not strictly herbaceous, but its stems strike root as layers, so freely, that it can always be divided when removed at this season, and cuttings are equally prolific.—*Aubrietia purpurea* grows much like the *Arabis*, and is of the same natural order, but flowers rather later, and continues covered with pretty purple blossoms till July, never wholly losing them till the winter. It spreads rapidly, and would form a beautiful edging.—*Iris pumila* flowers about April; rich purple, and very dwarf. Most visitors ask for a bit, and it increases fast enough for all.—*Phlox frondosa*, tiny thorn-like leaves, and bright pink flowers in May. I have a bed of Roses edged with this on one side, and *Gentianella* on the other.—*Phlox verna*, prostrate foliage, and rose-coloured flowers six inches high, in April, but a cold spring checks them.—*Linum flavum*, beautifully yellow, about May, but not quite hardy. Last winter, however, it stood out without suffering. It should be well drained.—*Hepaticas*. With these I find no difficulty myself, even though moved twice a-year. The leaves are apt to turn black, and die just as the flowers are in beauty, and are then best cut off. In May they are taken up and divided, and the roots cut back and planted deeply.—I have tried many others, but these are my sheet anchors, except bulbs, on which I hope S. N. V. will, hereafter, give his instructions.—INCOGNITA.

BEE SUPERSTITIONS.

FROM the many proofs you have given of a readiness to receive communications from, and advise young apiarists, I am sure you will excuse my troubling you with a few lines, briefly detailing my own doings up to this time, and asking your advice as to my future proceedings. First, I would observe, that I am living in the neighbourhood of Marlbro' Forest, not, I should think, a very favourable district for bee-keepers, the late frosts to which we are subject in the spring, sadly interfering with the operations of bees; still bees are kept to a considerable extent by my poorer neighbours although, as you shall hear, with all the prejudices and fancies of a century since. The habit of grubbing up

double hedgerows, now so prevalent on our farms, is supposed by many to have deprived the bees of much of their favourite pasturage, and thus to account for the small store of honey which the bees usually furnish now, compared with the good old times. In order to commence my experiments as an apiarist, I applied to a worthy old woman in my parish, better informed on most matters than those of her class generally, and with an especial reputation for her skill in the management of bees. She willingly consented to let me have one of her best stocks, but not for money, as that would be *unlucky*; it must be a gift, or it would not prosper; and such, I assure you, is the general opinion here, at all events. The hive was brought early in the spring, and placed on a stool, under a south wall, in a warm and dry situation. I procured one of the cottage hives in readiness for the swarm, whenever it should rise. The bees went on working most industriously, and the hive began to send forth a sweet savour of honey and wax, and an early swarm was expected. During the 2nd week in June, the bees began to hang in clusters outside, and show symptoms of the hive being too full to hold them. I regretted, of course, that I could not avail myself of the discoveries made of late years, and, by putting on a cap, employ their idle time till the queen was ready, and the weather favourable for the important event of swarming, however, I had nothing to do but to wait patiently. The wind and the weather continued, as you are aware, very unfavourable for the object in view. At length there was a change; on the 19th and 20th of the month, the bees hung out in still larger clusters, numbers not returning to the hive before dark. On the 21st the sun shone out very brightly, and, although the wind was very high, everything promised well for the rising of the swarm. While I was sitting in my room, a message was brought in about twelve o'clock that the bees were swarming; out I went much pleased at the tidings, when, to my dismay, I heard a loud banging and clattering of pans, for I remembered a remark in Mr. Taylor's book strongly condemning the practice as most absurd, and, indeed, calculated to drive away the bees, rather than to attract them. My first impulse was to stop these proceedings altogether, but I found it would not do; an old man in my employ, who had taken many swarms in his time, and was to officiate on this occasion, shook his head at the fearful innovation of silencing this horrible discord; and as I saw he would lose all faith if I interfered, I felt that I had no choice but to leave him to manage the matter in his own way. The bees (who certainly seemed most willing to alight in my little garden, had the music ceased or been somewhat more harmonious) went over the hedge which separates mine from a neighbour's garden, and alighted upon its opposite side. In the meantime the hive was to be prepared; salt, honey, and beer, were mixed together by another beekeeper who happened to be in the house, and the inside well smeared with the mixture; the edge of the hive must next be rubbed with majoram. When the operation was finished, my old friend, with the greatest nonchalance, took the hive and went straightway to the bees and began shaking them down into their future abode. The greater part took wing again, but a few were hived, and the hive was then placed upon the ground, and covered with the boughs of a tree. After a while the remaining bees again settled upon the hedge; the branch on which they hung was then cut off and placed by the side of the hive, and everything allowed to remain quietly until night; at night the bees were found to have taken to the hive, which was then removed and placed on its stand by the side of the parent stock. I weighed the hive immediately, and found the weight to be 11½ pounds. The swarm was pronounced to be *unusually* large, indeed the hive would hardly hold it; and I should imagine, judging from the above weight, must have amounted to seven or eight pounds, as the hive itself was small and light. Notwithstanding the music and smearing, so far all has prospered.

I have omitted to mention an instance of superstition very prevalent in these parts, concerning bees. One of my poor parishioners died after a long illness, leaving a widow and several children, and the other day the widow was lamenting that the bees "had done so badly since her husband's death, because she had forgotten to toll the hives, and put them in mourning."—A COUNTRY VICAR.

TO CORRESPONDENTS.

*** We request that no one will write to the departmental writers of THE COTTAGE GARDENER. It gives them unjustifiable trouble and expense. All communications should be addressed "To the Editor of The Cottage Gardener, 2, Amen Corner, Paternoster Row, London."

GLOXINIAS AND ACHIMENES (Rotation).—Your plants have been kept too long, either too wet or too cold. Your process of potting, and your compost, were quite right. When you placed them in the cucumber-frame was it very hot? If so, that alone would be sufficient to destroy the bulbs. Bulbs that have been a long time dormant ought to be placed at first in a temperature not more than 10° higher than that in which they have passed the winter. Examine the bulbs, and all that are rotten throw away at once. Such as are sound may start yet, though we much fear you will find the living principle extinct in them all by this time, though some may look green. Glenny's *Golden Rules for Gardeners* you will find a useful book.

LOPHOSPERMUM HENDERSONII (J. Betsworth).—This is a beautiful annual, half hardy, and easy enough to grow. You may put out part of your plants in the open air against a wall or paling, and put one or two in a 6-inch or 8-inch pot, and place these in your window. They will run round the window, and flower beautifully. The Globe Amaranthus (*Gomphrena globosa*) is a tender annual, and will not grow and flower in the open air. *Convolvulus major*.—As good a trellis as any for this plant are sticks with small twigs all round them; straight hazel-rods, without twigs, answer very well; or, if they are planted near a wall, a string of twine will answer.

PREPARING FLORISTS' FLOWERS FOR EXHIBITION (A. B. C.).—You are right; we do not approve of much manipulation for this purpose; but you may, with propriety and fair dealing, remove any imperfect or ill-coloured petals, provided you do not put any other in their place. You may also place the petals in a more regular form. Both these operations require much judgment and dexterity, or you may injure rather than improve your flowers. The only tool required is a pair of small ivory tweezers, with the ends flattened to take hold of the petals with. With regard to flattening *Pansies*, unless great care is used you will do more harm than good. You will be in danger of splitting the petals or rubbing off the fine bloom, either of which would be fatal. However, if you like to try, procure some round pieces of velvet or satin, and place it carefully upon a flower that is rather obstinate, and upon this covering place a penny piece for an hour or two before the time arrives to expose the flower. But all this will not make a good flower out of a bad one. A better plan is to grow the best kinds in great plenty, so as to have many to choose from.

BEES (D. N.—, Edinburgh).—Yes; the bee you inclose is a queen, a very young one, and was turned out of your stock-hive, dead, during the night of Friday, a pretty sure sign that no other swarm will issue from that hive this season. Your swarm, in all probability, has flown away, and very probably to a hive of old comb. It is very unfair to suffer a hive full of comb to remain exposed during the swarming-season, especially where many bees are kept, for a swarm is almost sure to go into it. The honey deposited in very old comb must, consequently, be much deteriorated in quality. There is no punishment for persons exposing hives of comb in the swarming-season, except from their own consciences in knowing that they have been guilty of a very dishonest act.

BEES (D. Porrell).—We have at the present moment four of Neighbour's improved cottage hives (No. 5) working under our eye; and nothing can be better suited to the amateur apiarian who wishes for a supply of fine honey in small quantities: the bees generally do remarkably well in them. It is better to use cotton, wool, or something of the kind, between your wooden cover and the bell-glass. Do not feed at this season; and when you do, give your food at the top, covered with a bell-glass.

DETHRONEMENT OF A QUEEN (Rev. J. M. C.).—You ask us to account for a queen bee's being expelled from a hive in which a new swarm had been placed seventeen days only; that is, to account for a supernumerary queen at all under the circumstances? The queen which led off your swarm was a very old one; and as soon as a young queen was formed, some time before she emerged from the breeding cell the old one would be expelled.

ABSENCE OF DRONES (Teddington Rectory).—Paint your hive stone-colour; it will then be much cooler than if it remains green. In all probability it swarmed last year, and became much weakened thereby; and in weak hives drones are not bred till very late in the season. Do not despair; you will see them yet; we have several hives at which drones have not yet made their appearance.

CATERPILLAR ON ROSE-TREE (S.).—It is the caterpillar of one of the Geometridæ moths; but we cannot tell the species until a moth is bred from it. Answer to your query about bees next week.

PEGGING DOWN DAHLIAS (Dromore House).—The main stems need not be stopped. If you peg them down by degrees, and gently, they will not break, and will soon send out branches spontaneously.

ONION GRUB (F. W. S., Melton).—Your crop of onions is attacked by the grubs or larvæ of the Onion fly (*Anthomyia ceparum*), of which you will see a drawing and description in the first part of *The Cottage Gardeners' Dictionary*, page 52. It is too long to extract. Attempts to destroy them are almost hopeless; but we have seen much good arise from watering every night for a week between the rows, making small trenches for the purpose, with the house-sewage, soap-suds, &c.

CISTERN UNDER A GREENHOUSE OR HEATHERY (Water Cistern).—We know of no objection to this; nor do we know anything of the flue tiles you inquire about.

CHAMPAIGNE (One who has risen).—At, not after. Be assured the worst of all ignorance is to be ashamed to ask for the information in which we feel ourselves in need.

POTATOES (B.).—Of the potatoes you mention, *Fox's Seedlings* are round, white, short-stemmed, and good for early cropping. Of the *Bread-fruit*, there are the red and the white, both prolific; tubers oblong and rather flat; keep well, but are rather late kinds. *York Regents* are rather late, but excellent potatoes. *Ward's Early*, *Penzance Kidney*, and *Wiltshire Kidney* we do not know.

ONIONS (Ibid.).—Of those you mention, the best keeping varieties are *James's Keeping*, *Globe*, and *Strasburg*.

THE COTTAGE GARDENER'S DICTIONARY (T. S. De Lolme).—Thanks for your criticism; an alphabetical list of synonyms will be given at the end; not a plant is admitted but is worthy of culture; as the height is given, every gardener knows the distance that should be between the plants; and every one of your other suggestions are met in some way or other. We never use symbols, because it causes more trouble to the reader without saving compensating space; and to have entered into all the particulars you require, the work must have filled three pocket volumes instead of one.

EXHIBITIONS OF CARNATIONS (R. S.).—The meetings for the exhibition of carnations and picotees are as follows:—Chiswick, July 19th; Surrey Zoological, July 24th; London Floricultural, Exeter Hall, July 8th. Carnations and picotees will be exhibited at the above places in fine order.

NAMES OF PLANTS (Cautious).—Your plant is *Oxycoccus palustris*, or English Cranberry. The price of our cloth cover for the six month's volume is one shilling, and for the twelve month's volume eighteenpence. Your other plant may be *Azalea procumbens*, but we cannot decide without seeing a specimen in flower. (J. Hudson).—Yours is *Hieracium murorum*. (L. P. S.).—*Polygala vulgaris*, or Common Milkwort.

OLD VERSES (Biblos).—We know the silly verses you allude to. They were published in 1737, and entitled "*A Contest between the Gardeners and the Tailors, concerning their Antiquity*." The gardeners claim precedence because Adam was a gardener long before he made an apron of fig-leaves.

VINE CULTURE (A. W.).—We beg pardon for not answering you sooner; the note was mislaid by one ignorant of its import. We are inclined to think that drought has had a full share in producing the evil of which you complain. Vines enjoy a liberal amount of moisture; but it must pass away immediately, for they love air as well, and it is needless to suggest to you the consideration of the truism that two bodies cannot occupy the same space. Your case does not seem positive disease, and, therefore, you might try the effect of a little weight at the ends of the curled bunches; a plan suggested by our clever coadjutor, Mr. Fish, many years since, and which is said to answer. Mr. F. may, perhaps, furnish you with information concerning it. Turn *Dielytra spectabilis* out of its pot.

DISEASED VINE LEAF (No signature).—Your injured leaves would seem to have been pierced by an insect. A friend to whom we sent the leaf, and who has been a notorious vine doctor, says that he has had leaves become thus which had been smothered by a host of minute Thrips previously. We could give an opinion if we knew where the vine grows, and how it has been treated.

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WEEKLY CALENDAR.

M D	W D	JULY 10-16, 1851.	WEATHER NEAR LONDON IN 1850.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bef. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in In.						
10	Th	Wood-Vetch flowers.	30.373-30.335	84-46	N.E.	—	56 a. 3	14 a. 8	1 43	11	4 56	191
11	F	Little Throat-Wort flowers.	30.343-30.325	84-47	E.	—	57	13	2 20	12	5 4	192
12	S	White Lily flowers.	30.343-30.257	81-52	N.E.	—	58	12	3 5	13	5 12	193
13	SUN	4 SUNDAY AFTER TRINITY.	30.213-30.202	81-48	E.	—	59	11	rises.	☺	5 20	194
14	M	Swallows congregate.	30.202-30.129	81-52	N.E.	—	iv	10	9 a 6	15	5 27	195
15	Tu	St. SWITHIN. Golden-Rod flowers.	30.136-30.125	75-49	N.E.	—	2	9	9 37	16	5 33	196
16	W	Star-Thistle flowers.	30.118-29.990	81-51	N.	—	3	8	10 2	17	5 39	197

BEFORE us are two volumes just issued from the press, entitled *The Correspondence of Horace Walpole, Earl of Orford, and the Rev. William Mason*, two of the most accomplished minds of the last century—both poets, both wits, and both most tasteful critics of designs in gardening. The familiar letters of such men could not fail to be stores of amusement; and no one can rise from the perusal of those letters without acknowledging that their authors were most truly like fire-flies, very sparkling, but very small. In our fourth volume we gave a slight notice of Mr. Mason, but there are much fuller particulars in these volumes, and we shall need no apology for placing them before our readers, as well as a memoir of the Earl, derived from the same, and other sources.

Mr. Mason left a chronology of the chief events of his life, and we shall quote this, weaving among its bare threads a few fuller notes chiefly from his own pen.

"1. Born Feb. 12, old style, 1724.—2. My mother died in childbed, the Christmas following.—3. Admitted pensioner at St. John's College, Cambridge, under Mr. Migley, June 30, 1743; elected scholar of that College the October following." And writing to Mr. Walpole, in 1775, he thus recounts some characteristics of his college career. "Thirty years ago when I was turned twenty, I used to leave Cambridge for London whenever I had five guineas to spare, on what they called a scheme. My scheme was to dine every day at a chop-house behind St. Clement's at two, in order to be in the middle of the pit at four, there to remain with all the impatience of expectation till the curtain drew up; and this I continued to do daily while my money lasted, and with as much regularity as I at present go morning and afternoon to see the ancient maiden gentlewomen and decayed tradesmen of this famous city of York mumble their matins and their vespers." "4. Nominated by the Fellows of Pembroke to a Fellowship in that society (a dispute having occurred between them and the Master concerning the right of election), when Middle Bachelor, 1747.—5. This dispute being compromised, was admitted a Fellow by the Master, in Feb., 1749.—6. Admitted to the degree of Master of Arts, July, 1749. Went into orders. Was instituted to the living of Aston, and appointed Chaplain to the Earl of Holderness, Nov., 1754.—7. My father died, Aug. 26, 1753.—8. Archbishop Hutton gave me the Prebend of Holme, in the Cathedral of York, Dec., 1756.—Appointed by the Duke of Devonshire Chaplain in ordinary to the King, July 2, 1757.—10. Resigned a bye Fellowship of Pembroke (which was given me by that society, after the foundation Fellowship became vacant), on institution to Aston, 1759.—11. Appointed Chaplain to his present Majesty, Sept. 19, 1761.—12. Dr. Fountayne, Dean of York, made me Canon Residentiary of that Cathedral, Jan. 7, 1762.—13. Installed Precentor of the same church, on the resignation of Dr. Newton, Bishop of Bristol, and on that account, in his Majesty's gift, Feb. 22, 1763.—14. Resigned the same day, to Archbishop Drummond, the Prebend of Holme, on having the Prebend of Driffeld annexed to the Primateship.—15. Married the daughter of Wm. Sherman, Esq., of Hull, Sept. 25, 1765.—16. She died in a consumption at Bristol, March 27, 1767. 'Ah! amantissima, optima femina, vale!'" "17. John Hutton, Esq., Marshe, near Richmond, Yorkshire, died June 12, 1768, by which death an estate in the East Riding came to me in reversion.—18. Mr. Gray died July 30, 1771, and left me his Executor jointly, with Dr. Brown, Master of Pembroke Hall.—19. Resigned the Chaplaincy to the King, Aug. 1773."

His reason, and we believe the true one, for resigning the royal chaplaincy, is thus told by him to Mr. Walpole:—"I hear (for I have not seen the paper) that it has been printed as a piece of news, that I have resigned my chaplainship, and a cause assigned for it, which I fear will offend Lord Hertford. I could wish, therefore, if it came easily into conversation, that you would assure his Lordship, that my intention of resigning (for it is at present only intention) arises merely from my resolution of not aiming at any further ecclesiastical preferment, but to sit down *uti conviva satur* in a parsonage, which I have built for that purpose. That as this parsonage is in Yorkshire, and my temporal concerns also in Yorkshire, a London journey at a stated time is often inconvenient, and will be (when I advance more in years) constantly disagreeable. On this account, and on this only, I mean to relinquish the chaplainship, and would wish to do it at any time when his lordship thinks it most eligible,

* In a MS. book of Mason's he has inserted: "Epitaph on my dearest wife, written at Bristol Hot Wells." It is not generally known that the three last lines of this Epitaph are the composition of Gray.—See Correspondence of Gray and Nicholls (ed. Ald.)

Two questions are just now being agitated, of so much interest to the lovers of flowers in general, and to nurserymen and florists in particular, that we notice them thus prominently.

The first case is concisely stated in the following letter:—

and I should imagine, that if you would please to intimate this to him, it would appear to him (as it is meant to be) a more civil way of proceeding, than by an abrupt letter of resignation. Remember you have, once at least, asked for a chaplainship, be assured if you ask for leave to resign one, you will find full as much gratitude from the person you do this latter favour for, as you did from the former."

At page 363 of our fifth volume, we noticed Sir W. Chambers, and his work on Chinese Gardening, expressing our conviction that the satire upon it contained in an *Heroic Epistle*, and in an *Heroic Postscript*, were from Mr. Mason's quiver. The volumes before us establish this conviction, for in various passages of the letters before us, are allusions as to the modes adopted for avoiding detection; this secrecy was desired because the attack upon Sir Robert was made a covert, from behind which to assail the court and its prevailing politics; but the authorship is no longer doubtful, after this passage from one of Walpole's letters. "Keep my letter and print it in the Gazette, either before or after my death, if I deceive you. Tell—shew here—under my hand, that I exhorted you to publish both the *Heroic Epistle*, and the *Postscript*."

We must refer our readers to our fourth volume for a comment upon Mason's "English Garden," and for the circumstances attendant upon his death, and postponing our memoir of Walpole until our next number; we will conclude for the present with this extract from the preface to the two volumes, a preface which makes us regret that their editor, the Rev. J. Mitford, has not been more copious in his notes.

"It was my wish, had time been allowed me, to turn from the heat and dust of these controversies, in which our two correspondents have been so long engaged, and to have represented one of them, at least, as he would best have appeared, in another and higher character, of the benevolent pastor of his affectionate flock, the faithful guardian of their temporal interests, and the teacher commissioned to supply their spiritual wants. In this character Mason would have more advantageously appeared than we have yet seen him. The church, which he improved and adorned, still attests the pious munificence which alike increased its utility and beauty: the children of the present generation are the successors, of those, for whose temporal and spiritual advantages he made that careful provision, which now passing into the hands of his successors, has become a permanent blessing; for he thought that within the walls of the humble village school must the early virtues be formed and take root, which are hereafter to preserve their bloom and fragrance amid scenes and climates the most ungenial and unfavourable to them. Nor would the dwelling of the author of the 'English Garden' be seen without respect and pleasure by all whose approbation is of value, from the discriminate taste with which it would be given. To those who may not have had the privilege which we have enjoyed, of being admitted within those kind and hospitable walls, it may be interesting to know that the house which Mason built still remains unaltered, or only in the alterations which time requires, improved* :—that his library still remains on the same shelves; his pictures still look down from the same spots where his hand had placed them; his closets still retain the curious and ample stores of literature that he deposited in them, and which have been ever since guarded with the most affectionate respect and attention to his wishes: and if the footsteps of the poet have long deserted the groves and gardens which he loved, the guiding Hand that formed them may still be traced, as it commanded its new and improved creations to arise. Among those trees which he planted, and which now, matured by time, spread their ampler shadows on the lawn, that same taste will be recognised, however confined the spot, in every winding walk, in each connected shade, and in every opening view, which hereafter expanding over a wider field, was to give, even to nature herself, a more pleasing and attractive dress; to refine and multiply the tastes of a whole people, and to call forth an art which could alike bestow its minuter beauties on the peasant's cottage, or spread its rich mantle of decoration over the most extended domain."

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-four years, the average highest and lowest temperatures of these days are 75.3° and 51.5° respectively. The greatest heat, 90°, occurred on the 12th in 1847, and the lowest cold, 41°, on the 15th in 1848. During the period 112 days were fine, and on 56 rain fell.

* "Hanc vides villam ut nunc quidem est, lautius ædificatam pastoris nostri studio, qui cum esset infirmâ valetudine, hic ferè ætatem egit!" These words of the Roman orator, with the alteration of one, may be applied to Mason's rectory at Aston, which he built at a considerable expense, adorned with taste, and which in his later days he seldom left.

"Mr. A. rents of Mr. B. a piece of ground, at his nursery, ten miles from London, and grows his roses there, because he finds they will not attain any size close to town, and he pays a man five shillings a week to look after them, visiting them himself occasionally. The question raised is, whether A has a right to show blooms

cut from this plantation? Mountains are made of mole-hills, and many objections have been made to Mr. A showing from the plants grown on Mr. B's premises; but we will not go into all the *pros* and *cons*, because we place the thing at once on a broader base. If Edmonton produced better pansies than any other locality, and we bargained for half a man's garden there, and Sawbridge-worth grew Roses better than other places, and we rented part of some man's premises there, and, in fact, went to the expense of ten bits of garden in ten places, and paid people to look after them, we are most decidedly of opinion that we should have a right to show from all of them. No line can be drawn that will exclude a man from exhibiting from all the pieces of ground he may rent. One of the best members of the Metropolitan Society was constrained by his business to reside in the heart of London, surrounded by its smoke; he grew his dahlias at a small nursery north of London, and frequently won prizes. There were dark insinuations about his not showing his own flowers; and at last, a formal complaint was made and met. He rented a piece of ground at a nursery, paid a man to look after his flowers; of course the case broke down; for you might as well refuse to let the Duke of Devonshire show from Chatsworth because he lives also at Chiswick, as forbid a man showing from twenty gardens, if he went to the expense of twenty. The only bad feature about the matter is, the renting of ground at a nursery; because there seems no check upon cutting from the owner's stock as well as one's own; but if a man be honest, he will not do so."

With the opinion thus expressed, we entirely coincide, with the exception that under no circumstances would we allow the portion of garden rented to be part of a nursery.

The second question is the following:—A nurseryman rents a piece of ground, erects upon it greenhouses, and stocks it thoroughly. The parish then endeavours to rate him to the *poors'* rate according to its improved value; and the question has arisen whether this higher rating is admissible. The question was brought before the Winchester bench of magistrates, and was decided by a majority that the higher rating is not maintainable. They held that greenhouses, unlike other buildings erected by tenants in other trades, do not attach to the land, but are always treated in law as stock in trade, which is clearly not rateable. What Lord Kenyon stated in *Penton v. Robart* (2 East, 90), is so strongly in support of this view of the case, and is so illumined by that enlightened policy which should influence a decision upon this question, that we offer no excuse for its quotation:—

"The old cases upon this subject, said his lordship, leaned to consider as realty (part of the freehold) whatever was annexed to the freehold by the occupier; but in modern times the leaning has always been the other way, in favour of the tenant, in support of the interests of trade, which is become the pillar of the state. What tenant will lay out his money in costly improvements of the land, if he must leave everything behind him which can be said to be annexed to it? Shall it be said that the great gardeners and nurserymen in the neighbourhood of this metropolis, who expend thousands of pounds in the erection of greenhouses, and

hothouses, &c., are obliged to leave all these things behind them, when it is notorious that they are even permitted to remove trees, or such as are likely to become so, by the thousand, in the necessary course of their trade. If it were otherwise, the very object of their holding would be defeated. This is a description of property divided from the realty."

Now, if a greenhouse be property divided from the freehold, it cannot, in the case of a nurseryman, be anything but a part of his stock in trade, which, as we have already observed, is clearly not rateable. The bench were not unmindful of the recent decision in *The Queen v. Haslam* (Justice of the Peace, xv. 24); but they held, though not unanimously, that greenhouses being uniformly treated as part of a nurseryman's stock in trade, the present was distinguishable from that case. We should not have mentioned this, but to apprise nurserymen of the mischief that is stirring; for if that mischief fixes upon them, they need not be reminded that it will be a very serious annual charge upon them.

GARDENING GOSSIP.

CHELTEMHAM MONSTER SHOW—for such was the name given to the first attempt, and, as the good people of that celebrated town chose the name, we will not attempt to change it. Some exceedingly misinformed gentleman has ventured to announce that in our remarks upon this great enterprise "*there is not a single statement founded on fact.*" Now we happen to have been one of the few writers who never had to apologise for a falsehood, nor to retract a paragraph, and if we do so now it will be a novelty. We can endure anything, pardon anything, but falsehood, wilfully put forth to lower any one in public estimation; and we expect no mercy ourselves if we, by any chance, should be found tripping; but, before we proceed to substantiate what we said, let us repeat the paragraph:

"The inhabitants of *Cheltenham* had a chance of establishing one of the finest shows in England, having the advantage of a heavy subscription. But they farmed the exhibition out to private speculators, who turned out one of the worst schedules that was ever printed, promised the most ridiculous prizes, cut them down after they were fairly won, and were actually threatened with law proceedings before even some of these were paid. It may be improved, but it will never be what it might have been with good management."

Now the statements here are exceedingly plain:—

1st. They farmed the exhibition out to private speculators.

2ndly. The private speculators turned out one of the worst schedules that was ever printed, and promised the most ridiculous prizes.

3rdly. Cut the prizes down after they were fairly won.

And, 4thly, were actually threatened with law proceedings before even some of these were paid.

Now *first*, we have it on the authority of Mr. Glenny, who was consulted from the commencement until it was turned over, that the first movers in the affair turned over £200 subscriptions to the parties who engaged, *on their own account*, to carry it through. Let this be denied or evaded, as the case may be, yet the fact cannot be denied.

Secondly, we refer to the schedule itself, the worst for a public show that was ever put forth, and so ridiculous that the judges were ashamed to award the prizes even to things shown fairly up to the point of excellence;

for example, six pounds for eighteen cut roses! Mr. Wilkinson, of the firm of Curtis and Wilkinson, of Bristol, is one of our authorities for saying that the roses were shown quite up to the mark, and we deny the judges right to lessen the prize unless the roses had been shown in some point deficient. They had no right to take upon themselves to correct the schedule. But there was just as stupid an engagement for the best bulbs, and the prizes for both roses and bulbs were cut down. We maintain, that if the managers had been absurd enough to promise five pounds for the best cabbage, and the best cabbage shown had been excellent, the judges had no right to curtail the prize. Judges may decide that unworthy subjects should not have first prizes; but we entirely deny that they have any right to lessen a proferred prize, unless the subjects shown were second instead of first-rate. Mr. Turner, of Slough, was one of the judges; he might have felt ashamed to award six pounds to eighteen varieties of cut roses, but he had no right to make the exhibitors, who came a hundred miles, perhaps, to show them, feel the penalty of that just shame. Mr. Turner knew well that the man who offered such prizes must have been very ignorant, but having been offered, and people having come many miles tempted by the bait, the judges had no business with the amount. We happen to know that the best eighteen roses were as good as they could be shown, and that the shower ought to have had three more pounds awarded. But roses were not the only things so curtailed of their due. We mention them because we happen to know their condition better than that of some other things, and because we can refer to an authority as good as any in the rose trade. We have now disposed of our second and third charges. As to the fourth, Mr. Mayle, of Birmingham, could not obtain the money for some of his prizes for a long time, and after in vain trying the committee and the judges, he asked Mr. Glenny's advice, which was *that he should give them one more application, informing them that he should put the matter into the hands of his solicitors.* This was a long time after the prizes should have been paid; and this threat, we believe, brought the money; but if it did not, the prizes are still unpaid.

We now leave it to the readers of THE COTTAGE GARDENER to decide whether our charges are founded on fact or otherwise. We fancy that the worthy defender of the Cheltenham Show will have to convince the horticultural world, that the concocters of the first schedule—the speculators in the first show—the cutters down of the first prizes—are no longer concerned, before he will create a confidence in the show. If those now concerned be not the parties concerned in the original show, the writer should have expressed as much, and convinced the public that, however true our charges were as against the originals, *the present movers were not the same.* The attempt to deny charges which we are prepared to substantiate was overstepping the mark. He encloses a schedule; is it in any one item like the schedule of the private speculators of last year? Our whole paragraph related to facts indisputable, to charges which cannot be denied, and we repeat most emphatically, "It (the Show) may be improved, but it will *never* be what it might have been with good management." We refer, at once, to Mr. Glenny for our authority as to the fact of the subscription, two hundred pounds, being handed over to the proprietors of the gardens, who engaged to carry out the show. We

refer to Mr. Wilkinson, of Ealing (late of Bristol), as to the condition of the roses, and the cutting down of the prizes; but there are plenty to confirm this. We refer to the schedule itself as the most laughable proof of its folly; and we refer to Mr. Mayle, of Birmingham, as to the difficulty of getting his prizes. But, if necessary, we think we can produce an actual correspondence to confirm all we have said. E. Y.

Since the above was in type we have received the following from Mr. W. Davidson, one of the judges of the Cheltenham Show:—

"I observe in last week's COTTAGE GARDENER, some remarks on the Horticultural Exhibition at Cheltenham, on June 12th, and, as one of the *judges* on the occasion, beg leave to inform you that you are misinformed on some points, and will thank you to do simple justice in the case. It is not my province to account for the formation of the schedule, with which myself and fellow-judges had no concern, excepting in awarding or withholding the prizes according to the merits or demerits of the subjects competing for them, and to do this the printed rules of the Society fully authorised us. The committee neither cut down the prizes, nor directed or influenced the judges in doing so; but the latter simply did what they conceived to be their duty between the Society and the exhibitors. The prizes were high enough to have induced the best plant growers within one hundred miles to have competed, as I believe the Society pay exhibitors the expense of bringing plants from a distance; but owing to the show being fixed for the day after *Regent's Park*, none of those who exhibited at the latter place could get to Cheltenham, and the competition was, therefore, confined to a few small growers in the immediate neighbourhood. No prize that was fairly won was withheld; if we erred at all it was on the liberal side; if we had in all cases given the first prizes to the best plants present, we should not have done our duty conscientiously towards the Society, but should have been unworthy of the confidence reposed in us. The amount of the prizes, if they had been all awarded, would, in many cases, have been more than the plants would have been sold for at a sale by auction. At many provincial shows when I have acted in the capacity of judge, I have seen far better plants exhibited for prizes not more than one-tenth of the value of those offered at Cheltenham; and I feel quite certain that not more than two dozen plants could have been selected from the whole number exhibited, which would have been admitted at Chiswick or Regent's Park upon any terms."

[The above confirms rather than refutes our reporter's statement, and we fully coincide with him in the opinion that judges have no right to reduce the amount of a prize. As six guineas were unreasonably offered for the best eighteen cut roses, the eighteen best, if so grown as to be entitled to be exhibited at all, should have had the prize, because, as Mr. Davidson truly says, "it is not my province to account for the formation of the schedule." —ED. C. G.]

A correspondent (*S. P., Rushmere*) says, "during a trip to France this month, I saw in a garden at Fontenay aux Roses, *seven different sorts of Rockets*, all of them distinct in habit, and very beautiful, *viz.*,

White, giant, growing five to six feet high, with immense spikes of flowers. *White, medium size*, usually cultivated in England, height about two feet, *White, dwarf*, also usual here, not more than one foot. *Purple*, about two feet high, an abundant bloomer, very double and showy, the colour of a dark purple candy tuft. *Crimson*, two feet high, rich and attractive, but the spikes not so large as the purple. *Rose or Peach*, same as we have in our gardens, but grown finer, probably owing to the climate. *Yellow*, very double and more compact in form, eighteen inches; this last, I think, was not a Rocket, but a double-flowering *Erysimum*. I could have had slips of the above, as the owner was a

market gardener, but my route prevented, as it then lay into the south of France.

A new strawberry, so called, was exhibited at the Surrey Gardens. It was a fine berry, so much like Wilmot's superb, that we felt inclined to pronounce it such. The flavor was good, but the larger berries hollow. It had a certificate of the first class, but we think it no better than Wilmot's superb, and too much like it to be a favourite.

The Surrey Zoological Gardens have a strong claim on the good-will of florists' in general. It was almost the first place of exhibition in the open air, having been the original exhibition ground of the Metropolitan Society, which started public shows the same year as the Horticultural Society. The Metropolitan Society, however, withdrew on account of some misunderstanding, and the South London Floricultural Society was established to continue the shows there; and from that time to the present the proprietors of the gardens have given more than two thousand pounds towards the prizes. Had the Society been well managed, the shows might have equalled those at Chiswick and the Regent's Park.

Cut flowers in Covent Garden are at length a drug. It is little use taking up a quantity, and even the very best from stove and greenhouse plants will sell for but little; not that there is any diminution of the demand, on the contrary, there are more sold than ever, but the supply has been over-done.

There was a time when the flowers on a plant would bring as much as the plant was worth, but everybody is producing and taking to market, everybody driving at a sale, and the retailers have all their own way. Moss roses in bunches of eight or ten have been sold at twopence per dozen bunches. The flowers of orchideous plants, and of expensive stove climbers may be seen in all the shops in the middle row.

Every arrival of *Pines from the West Indies* seems better than the last. Whether they are gathered in a better condition for keeping, or the voyages are made quicker, we know not, but they are brought over in passable order, and their cheapness sells them; but the best are no more to be compared with an English-grown pine-apple than a turnip to a fine melon. E. Y.

NEW PLANTS.

THEIR PORTRAITS AND BIOGRAPHIES.

LARGE-FLOWERED THIBAUDIA (*Thibaudia macrantha*).—This most beautiful warm-greenhouse evergreen shrub, belongs to the Natural Order *Whortleberries* (Vacciniaceæ), and to 10-*Decandria* 1-*Monogynia* of the Linnæan system. The genus is now formed of species once endeavoured to be raised into a separate genus, under the title of *Agapetes*, beloved ones; and though this well expresses the feeling created by their beauty, yet there is no sounder reason for detaching them from the older name of *Thibaudia*; so this has been retained and *Agapetes* has been abolished. *Thibaudia* was so named in honour of M. Thiebaut de Berneaud, author of several botanical memoirs, and Secretary of the Paris Linnæan Society.

Thibaudia macrantha is the most beautiful of this most beautiful genus; for its five-sided flowers of white and yel-



low, with their crimson tracery, hang like Chinese lamps among the smooth, bright-green foliage; and these flowers well entitle it to its specific name, for they are often two inches and a quarter long, and one inch in diameter. Messrs. Veitch and Son, of Exeter, raised it, in 1849, from seed received from their collector, Mr. T. Lobb, who gathered them in Moulmein, upon the Kola Mountain. It flowered in the December of 1850. The bark of the shrub is very light brown, and smooth; leaves on thick short stalks, willow-shaped, and smooth; flowers, two or three together, hang down from the bark between the joints; stalks red near the calyx which is yellowish; corolla china-white, marked with crimson zig-zag lines, five-angled, angles yellowish, mouth five-lobed; with stamens and pistil projecting beyond the mouth.—J.

THE FRUIT-GARDEN.

ESPALIER FRUITS.—Whatever course may have been pursued previously to this period, a thorough revision of the trees is absolutely requisite in the early part of July; and this applies to the whole of our hardy fruits in course of training, even extending the operation to untrained trees, if time can be spared. Thinning out progressively has been recommended at various times through the spring, but even where this has been tolerably well attended to, much remains to be done. This is the period in which almost every gardener, of any standing in his profession, seeks to "lay in" the young wood of his peaches, nectarines, and apricots; that is to say, to train either by nailing or other mode, all the longest shoots, both to prevent their being broken by the wind, and to enable the future bearing shoots, or spurs, to enjoy the full benefit of sunlight; without which, for many weeks, dating from about Midsummer, it is vain to expect a fruitful habit, or properly ripened wood. In order to be well understood on this subject, we had better take the fruits separately, beginning with the most needy, and following with the rest in order.

THE VINE, OUT-DOORS.—No fruit more needs every glimpse of sunshine in our changeable clime than this, whether for the sake of present, or prospective crops. If the dressing has been neglected in any degree previously, the trees will be in a confused state; which,

indeed, is not unfrequently the case, especially with vines trained in houses. The vine-dresser must begin with disbudding every shoot not required for the present crop, or for filling blank spaces; *not one must be left for which a reason cannot be given.* This done, a general stopping must be practised as a rule, only leaving a couple of eyes beyond the fruit. Where, however, vacant spaces exist, shoots may be left nearly as long as the vacant space is high, stopping them in due course, when near the top of such space. And now the shoots should be fastened close to the wall or roof, taking care not to cram the bunches too close to the wall. Where vines have been duly attended to previously, the stopping, or removing of laterals, will be the chief business; these may be, for the most part, pinched to one eye; but where the foliage is becoming too thick, let them be at once stripped clear away; for, be it remembered, we would make it a point never to suffer any mere spray to shade one of the principal leaves through the whole summer. This is the key-stone of the arch in out-door vine-culture.

THE PEACH AND NECTARINE.—Having offered sufficient advice on these, at page 187, we need not amplify here on their summer treatment. Let us, however, repeat, that a close attention to their Midsummer dressing, as there detailed, is imperatively necessary. The true bearing wood for the succeeding year, must have every facility afforded it for ripening. There is no reason why a single shoot should be retained long after Midsummer, which is not really wanted, and for which a reason cannot be afforded. This severe practice, closely followed, is the true clue to a thorough ripening of the wood; on which, as before observed, a good future prospect can alone be based.

THE FIG.—Here we have a particular subject. The fig is an "odd sort of fish" by the way. The very first point in out-door fig-culture, is its training; that is to say, a determination to ensure plenty of light to all the young shoots requisite for future bearing. A nice discrimination is requisite in selecting, for the fig, under ordinary circumstances, is apt to produce an undue amount of spray, and that, too, at several intervals; thus, several disbuddings become necessary. Short jointedness is alone the criterion of fruitfulness; no one need expect successful crops from shoots like willow twigs. It so happens that such are not always the first development. Many of the first-made shoots will be found of an opposite character, and must be rubbed away without hesitation; and some, subsequently produced, will be found much fitter to be reserved. Let there be no hesitation, then, in removing those with the features of barrenness; and such will continue to be produced occasionally until the beginning of August. Not a single shoot, indeed, produced after Midsummer, ought by any means to be reserved, that is to say, shoots emanating from the main stem; such are sure to be too succulent to ripen well. This character of wood must not, however, be confounded with a second growth, which will frequently spring from the point of the current year's shoots that have been pinched or stopped. The latter is almost always short and fruitful, owing, doubtless, to its emanating from sap in a highly elaborated state.

And now the trees being totally divested of every needless shoot, let us turn our attention to stopping, or pinching, of the young shoots; an operation which, although not equally necessary with all kinds, and under all circumstances, is, nevertheless, in the majority of cases, of much service. To convey an idea to the uninformed, as to what are, and what are not, fitting subjects to operate on in this way, we may observe, that the main point is not to cause the trees prematurely to develope a host of flourishing looking fruit early in the autumn, but to prepare the trees for that condition by

the spring. It is well known that all fruit which is large as a horse-bean in the autumn, can never be relied on to endure the low temperature of a long British winter; and that all good practitioners strip all such away, well knowing that they will draw in the matured resources of the trees. It is another thing, however, to find nice short-jointed wood in the autumn, full of those plump and double-looking buds, in which may be plainly seen, or felt, the embryo young fig of the future year, at this period a mere protuberance only, the winter quarters of the future fig. Such will endure the winter as well as the wood itself, and one of the prime objects should, doubtless, be, to get plenty of shoots of this character. Some kinds, under certain circumstances, naturally produce them, whilst even the same kind, under adverse circumstances, needs a little fingering, in order to induce such a habit. In general, such "stopping" will be best performed from the middle of July to the middle of August, according to the character of the wood; that which has the least tendency this way at the earliest, and that which needs less assistance at the latest period. The practice of one season, with a close observation, will teach any intelligent practitioner the rationale of the whole procedure. It consists merely in *squeezing* the point of the young shoot flat, where such shoot has produced some five or six eyes.

PEARS.—Having in previous advices said a good deal on this head, we will not now occupy much room. The main point is to pinch the top off every shoot that is not wanted ultimately, we dare not say totally remove them, or we would. As it has been observed before, light more than heat is the all-important object with regard to the tender kinds. It is, doubtless, good practice, then, to commence clearing away obstructive matter betimes; and as the work is compelled to be progressive, an early commencement is necessary. Thus, through May a severe disbudding is requisite, carrying the operation even into June. Through June and July the pinching or stopping may succeed the disbudding; and by the end of July, a total removal of many of the shoots which were pinched may take place. The reasons for this course stand thus: with three-fourths of our pears in this climate, it is necessary to take some steps in the spring, when they first shoot, to check an over-active root, which is but too apt to occur through mild, showery weather, especially if the soil contain anything rich, or much organic matter. This check is accomplished by the disbudding; for, although such grossness may be mainly attributable to a robust condition in the previous year, yet, as these things proceed at a sort of compound-interest-rate, no sooner do such shoots become developed, than instant provision is made by nature for an enlargement of the fabric of the tree, by a considerable accession of new fibres, or a corresponding extension of the old. Such is, at least, our view of the matter, and we do think it would be difficult for any one, whether theorist or practical, to disprove the doctrine. But this severe operation, by consequence, leaves a kind of surplus fund of sap for a-while in the system of the tree; and, as the embryo blossom-buds of the future year will soon be in the course of organisation, care must be taken not to drive them beyond sober bounds, and thus convert them into shoots. Suffering, therefore, the tree to employ the surplus in shoots of moderate character for a-while, is a good decoy; and by, or about, Midsummer, the habit of the embryo buds becoming more confirmed daily, means may commence, having for their object the free admission of light, to mature all the remaining processes. Such means consist, at first, in pinching the points of every shoot which has to be destroyed ultimately; and, as before observed, towards the end of July, a number of such shoots may be removed by the knife, merely leaving a couple or three eyes, with their leaves, at each base.

About the end of August, our practice is to top the whole of the shoots; and, also, at or about this period, to remove as many of the first pinched-back shoots—now become a kind of waste snag—as seem to shade the natural spurs and the fruit; such we cut close away. We had intended to have offered a “Companion to the Calendar,” a practice which we by no means think it expedient to throw by altogether; but still one which it would seem may be suffered to give way, occasionally, to a press of other matter. It will, perhaps, be necessary in our next to continue this observation on the Midsummer management of fruit trees; and, in the meantime, would beg the readers of this work to be very much in earnest all July. Fruit culture is not yet above half-understood; and what is known, is not one-third carried out. When there is as much earnestness in this matter as in flower culture, then will British gardening become a whole; now it is but done by halves.

R. ERRINGTON.

THE FLOWER-GARDEN.

PRUNING EVERGREENS.—With the exception of the *Laurustinus*, which should be pruned only in May after it has done flowering, this month is the best time in the year for pruning evergreens; but, with a few exceptions, you may go over the gardens of half the country, and see that for the last twenty years the proper management of evergreens has almost been entirely neglected. There is nothing about a place which, more than another, tells that we have all too many irons in the fire, than this class of plants. When people have leisure in the winter, they know that it is not the right time to put their evergreens into good shapes, or keep them to their proper bounds; and in the summer, when the work should be attended to, they know just as well that they have no time to attend to such things. Young evergreens get up, in a few years, with all sorts of defects, and fifteen or twenty years hence, a practised eye can see what is going on among them now as well, if not better, as if the same eyes were present this very July—leaders and side branches grow as they list. Fastigate or upright growing sorts get round-headed forms, round-headed ones grow to one side, the leading limbs to this or that side of a tree, and all, and much more besides, for the want of the pruning-knife, or of the finger-and-thumb-way of stopping, applied regularly at the proper season. It is not too much to say, that in a first-rate garden the pruner is, or should be, as busy at his section in July as at any other period of the whole year; and, as a criterion as to how far he has advanced in his art, we shall lay it down thus. A stranger looking at an evergreen bush or tree, of any size or age, directly after it has been pruned, should not be able to perceive, at a cursory glance, that the knife had touched it for the last twelve-months. If one can see, at a glance, that an evergreen has been recently cut in, depend upon it the pruner wants a notch or two. The worst of the matter is, however, that it is very difficult to convey, by verbal or written descriptions, a just notion of how this high style of art is effected.

I am never measured for an article of dress, without regretting that one man cannot explain the finger-work of his art to another with the same precision as the best “fitter,” but, as that cannot be done, we must be content with general maxims or rules; and one of the first fundamental rules in pruning evergreens is, *the lowest branches should be the longest, whatever the shape of the head may be*. There is not a single exception to this rule that I know of; no sooner is a higher branch allowed to grow out farther from the main stem of a tree, or from the general mass of branches on a bush, than the lower branches, than a direct error is committed; and, if not

remedied by cutting in this longer branch, a sure foundation is laid for the destruction of the lower parts of the tree, which will, in the long run, cause it to get naked below, because the longer branch will shade the others and throw off the rain from them. You may see an example of this bad management along the road-sides in every parish in England. Hedges, in general, are so unskilfully treated all over the country, that there is no lack of “bare bottoms” anywhere, and this from allowing the hedge to be nearly as broad at the top as it is at the bottom. Let us, therefore, bear in mind that every branch, yea, every leaf on an evergreen, should stand in the same relation to each other as the slates or tiles on a roof, no matter what the outline of the head be.

The second rule is, *no leaf should be cut through in pruning an evergreen*. Clipping evergreen hedges does not come in under the rule of pruning.

The last rule applies to the mode of cutting. *No cut ends should be seen on the bush or tree*; and that is effected by beginning the cut on the opposite side to where you stand, and always cutting with an up stroke; then the cut part will either face downwards or towards the centre of the plant; and if you cut quite close to a lateral branch, or to the bottom of a leaf-stalk, as all good pruners do in the summer, and as all the worst kind of pruners do in the winter, I should like to know how I, or anybody else, could find out, at a yard’s distance, that your plant had been pruned at all. This reminds me of how we explained the difference between the cuts in summer and in winter-pruning at the very beginning of THE COTTAGE GARDENER; and I take blame to myself for not having drawn public attention to that point every summer since. There is a very common and a most mischievous pruning cut, which, as far as I am aware of, has never yet been mentioned in print, and I hope to put scores, yea thousands, to the blush when I mention it, for of all the cuts in this cutting world, it is the one against which there ought to be an Act of Parliament to put it down. But I am wrong; it is not a cut at all, but a snap off, and is done on this-wise: a knife is held firmly by the four fingers of the right hand with the edge facing the thumb, the thumb itself being free, but bent on mischief; a rose shoot, or the branch of some other plant, is now grasped between the edge of the knife and the thumb, the shoot is then pressed against the edge of the knife by the thumb, and by a turn or twist of the hand the shoot is snapped asunder on the edge of the knife, leaving a bruised or jagged cut, just as if a wild goat had gnawed it off. Now, a dozen of such bruised or gnawed cuts over the head of a fine rose-bush, are as bad as any thing can be, and will be sure to do it much injury, as the bruised ends will either die back or let in the wet, or be a harbour for insects or their eggs, besides the slovenliness of the thing.

BANKSIAN ROSES.—The knife should never touch them in the way of pruning, except during this month, or very late in June, just after they have done flowering. The great cause of their not flowering well, is either that they are pruned at the wrong season, or that they are allowed to make very strong shoots that never ripen well. All the pruning they require, is to thin out some of the long shoots entirely, and to cut back, or spur the little side branches. The reason for this kind of pruning is, that they do not flower on the current year’s wood, like other roses, but on the wood made the previous season. Then, to get a season’s growth well ripened before the winter is the grand secret of their proper management, and the best way to do that is to confine them to short growths, by nipping off the tips of all the side shoots before they extend six inches in length, so as to cause them to break out into still smaller branches, and all the wood or growth they make after the middle of September should be nipped off

altogether, as there is no chance of its getting ripe enough in time. With this management, and by keeping down the fly, the Banksians will bloom as freely as any other roses that are good-established plants. Like most of our fruit trees, these roses require to be four or five years old before they bloom much; indeed, it is not a good sign that they flower much the first or the second year after they are planted, as that must be the effect of a weak, stunted growth the year before they were planted. Any of the strong evergreen climbing-roses make better stocks for the Banksian than the dog-rose, and as these will grow well on light soils, where the dog-rose could not hold up its head, they are more suitable in many places. The roses, *Madame Laffay* and *Mrs. Elliot*, on their own roots, with me at this moment (1st July), are the most luxuriant, and the heaviest cropped roses I ever saw or heard of. The plants are four years old, standing in rows in a piece of nursery ground, outside the kitchen garden. This ground was taken from the park six or seven years since, and was little better than drift sand, and at twenty inches below the surface a bed of pure white sand lies to the depth of ten or twelve feet. Since then, the garden has been drained, and, perhaps, six inches deep of clayey subsoil, from the bottom of the drains, was spread all over the rose-nursery in the course of four years. The dog-rose will hardly carry a leaf in this ground, and yet all the strong hybrid perpetuals grow away in it like weeds, and on their own roots too. But there is another feature in the story which I am desirous of calling attention to, and it is this; we count from six hundred to one thousand rose-bushes in and about the kitchen-garden, reserve grounds, nurseries, &c., independently of the flower-garden rosary; and among them are roses of all the classes, except climbers. Last season about this time, I made up my mind for an experiment on a large scale with these, our reserve roses, and the result has delighted me, and all about the place; for none of us ever saw so many, and such fine roses before in these gardens or any where else, from the same number of plants. The experiment was a most simple one, indeed; the knife never touched any of the plants for the last eighteen months, that is, they were pruned in October and November, 1849, and all the growth they made in 1850 they were allowed to carry on to 1851, and the result is just what I have stated. How I intend to deal with them now, and for this coming autumn, I shall tell next week. Meantime, it will be sufficient to say, that as early as the beginning of last April, we could plainly see that the unpruned roses would come sooner into flower than those in the "rosary," which were close pruned last November, and that they would not break from the bottom: that is, the bottom buds would not grow; *Rose de Roi*, or crimson perpetual, being the most likely to have the greatest portion of naked shoots below. Before the first shown roses faded, however, the bottom eyes began to push, and now they form a complete succession of flowering shoots, from an inch to six inches long.

D. BEATON.

GREENHOUSE AND WINDOW GARDENING.

ANOTHER FAGGOT OF TRIFLES.—WATERING.—The superior manner in which many plants are grown in cottage windows, is generally owing to the treatment they receive from the female branches of the family. Simple though it seem, the mode of applying the water pail has more to do with success, and the want of it, than is dreamed of in the philosophy of the take-it-easy folks. If examined and looked into, four out of every five cases of death and disease among plants, where the

attendant circumstances necessary to health are come-at-able, are owing to an improper use of the water-pail.

In places of any magnitude, where the gardener cannot pot and water everything himself, he is in this respect, to a great extent, at the mercy of his assistants. Good talents they may possess, studious they may be, regular in their habits, young philosophers in their lodgings; for without something of these, respectable men would scarcely employ them; but with all these omens of hopefulness, as presages and signs of the bright days coming, the most experienced among them will be the first to allow, that simple though it seems, nothing requires more judgment and experience than watering a plant when it wants it, and passing it over when it requires no supply of moisture. The rule has often been given, and the reasons for that rule fully explained, "*water a plant thoroughly when it needs it.*" Let the moisture reach every rootlet fibre, then wait patiently until your services are again required, and then repeat a similar application. The mode of applying the water must be regulated by the nature and circumstances of the plants. Thus, for tender and small plants, we would use a fineish rose, or a spout applied very gently, covering the surface of the pot with water, as nearly as possible in a horizontal position; the finer the soil, and the finer the rootlets, the more indispensable would this appear. Again, for larger plants, coarser soil, and larger rooting things, we would use a coarser rose, or send the water from the spout of the pot upon a tile or potsherd laid on the surface, to prevent the soil being torn up into fissures and gullies. But look now, and behold this specimen of a rose waterer; which we hope, ere long, will constitute a curiosity in an antiquary's museum; though not so very long since he, and such as he, might have been studded in rows by the dozen. He has a great aversion to using the spout, or even a large-pierced rose on any occasion. He has been told, and quite rightly we admit, that the finer the drops of water, the more atmospheric air will a certain quantity carry down into the soil, and among the roots of plants;—it is quite a treat to observe the *gusto* with which he watches the descending dew drops, though you may note that, blinded by his transcendentism, he sees not that by never moving his hand, these drops, however small, are making where they fall, a hole in the soil, upon the principle that the dropping fluid wears away the hardest rock,—thus providing not only for an under exposure of rootlets, but next to guaranteeing that *one* side of the pot shall receive a better supply of water than the other; and not only so, but the very *time* required for watering large, vigorous plants with such a fine-pierced rose, allowing that the waterer is quite aware of what he is about, is apt to make him pass by such large specimens with an undue supply, and the consequence is, that with two or three inches of wet soil on the surface, the rest of that in the pot, as well as the roots, might as well have been in the deserts of Libya, as honoured and petted in a greenhouse or window. On the other hand, there is that reckless, dashing, spout-watering gentleman;—Stand pondering over the droppings from that dewy rose!—no, not he; dispatch is the order of the day. Except for things in which he may feel a spice of enthusiasm, you might imagine the railway whistle was ever vibrating on his ear. Be the pot large or small, long potted or fresh potted, the plant rough or smooth, strong or tender, possessed of thick fleshy roots, or fibres finer than a lady's hair, with straight back, and head erect, and spout of pot from twelve to thirty inches from the soil; down descends the liquid stream, like a jerked avalanche from the Alps, or a run-away streamlet from Niagara. True, the soil may be tossed out, and made to adorn the sides of pots lately fresh washed; holes may be made as if a ploughshare

had been sporting; hard, firm, compact balls may stand little chance of receiving a suitable supply, like their later-potted, freer-absorbing brethren. The force of the stream against the stem of many hard-wooded plants, especially after a hot day, and when the water is rather cool, may promote such gangrene and disease, that the green flourishing plant of the morning may be withered and dried up before the evening. But what reckes he? A little more care, even *with the spout*, a stooping position, gently running the water over the surface of the soil, or even pouring it on a piece of tile or oyster shell, would prevent many of these contingencies, which he is ever ready to ascribe to soil, to situation, to sun, to each and everything but his gallant use of the water-pail.

One word more. If we professionals make such slips, ought we not to excuse many of the short-comings of our amateur friends? Some time ago, I was asked what could be the matter with some window plants that certainly looked rather queer. The soil on the surface of the pots was moist; there was water in the saucers on which they stood; they had been regularly supplied as they got dry, both top and bottom, for several months, and still they flourished not! and what could be the matter? It was elicited that a little water was first generally put into the *saucer*, and then a *little* into the pot; because a great man had said that if water was communicated below, it would be drawn up by capillary attraction. Here was a gleam of light; catching the pot in hand, its *lightness* unravelled the mystery. Turning the plant out of the pot was the work of a moment; it had been well and openly drained, but the roots had not got to the bottom, and of capillary action upwards, therefore, there was little;—about one inch on the surface of the soil was moist enough; the middle parts might have been baked in an oven. The moistness of the surface prevented, to a great extent, any benefit being derived from the moisture in the saucer. The pots were plunged in water, to give them a perfect soaking; afterwards, when getting dry, they were watered on the surface until the water ran out below; and if such came, it was thrown away, leaving none to stand above the drainage, and healthy, nice flowering plants were the consequence. If there is such a thing as teaching by example, then these ideas may be worth the paper on which they are printed.

R. FISH.

HOTHOUSE DEPARTMENT.

EXOTIC ORCHIDACEÆ.

ORCHIDS THAT THRIVE WELL IN POTS—(Continued from page 192).

ONCIDIUM SPHACELATUM (Scorched O.); Guatemala.—Flowers, with a yellow ground, barred and spotted with rich brown. This is a handsome freely-flowering and fast-growing species. The flower-stems spring from the base of the pseudo-bulbs, to the height of three or four feet, and send forth numerous side branches, on which the flowers are placed thickly. Though each flower is, comparatively speaking, small, yet, from their numbers and bright colours, the effect of the whole is beautiful. A desirable species. 15s.

O. SPILOPTERUM (Yellow-winged O.); Brazil.—Sepals and petals purplish brown; lip broad and of a lively yellow; the wings of the column are very conspicuous, and also of a clear yellow, spotted with red. A small very pretty species. The flowers are borne upon slender stems, a foot high; rather scarce. 42s.

O. STRAMINEUM (Straw-coloured O.); Mexico.—Sepals and petals straw colour; the lip and petals are spotted with crimson; it is sweet, something like primroses. The leaves are about six inches long, and one-and-a-half wide, stout and leathery; the flower-stems spring out of the base of each leaf, growing, when strong, a

foot high, and much branched. There is a neatness about the flowers that render this a desirable one to grow, especially in a small collection. 21s.

O. TRULLIFERUM (Trowel-bearing O.); Brazil.—The whole of the flower is of a yellow ground colour, spotted with brown; the lip is shaped like a trowel, hence the specific name; the flower-stems rise from the base of the long pseudo-bulbs, and are erect and branching. The plant is handsome all the year, which, together with its curious-shaped lip, renders it worthy of cultivation. 21s.

O. WENTWORTHIANUM (Mr. Wentworth's O.); Guatemala.—Flowers yellow, stained and spotted with crimson; the pseudo-bulbs are twice as long as broad, and are barred with purplish spots; flower-stems long and slender. A very pretty species, of easy culture. 21s.

O. WRAYÆ (Mrs. Wray's O.); Mexico.—Sepals and petals bright clear yellow, richly spotted with brown; lip large and pure yellow without any spots; the flowers are large, and are produced on stems nearly erect, and from four to five feet long. A most desirable species, but very rare. 63s.

Culture.—This splendid and large genus of orchids may be divided into two sections: the one with large thick leaves, and obscure pseudo-bulbs, of which *O. lucidum* furnishes an example; and the other with large conspicuous pseudo-bulbs, and rather thin, long leaves, of which *O. sphacelatum* is the type. As might be expected, a somewhat different culture is required for each section. *First section*: the large-leaved plants are mostly natives of the tropical parts of the New World, and, in consequence, require the Indian house to grow them in. During the season of growth they require a liberal supply of moisture, both at the root and in the air of the house. *The compost* for them should be very open, to allow a free egress to the water: for if it is allowed to stagnate, either in the compost or in the hollows of the large leaves, when young, there is great danger of their damping off. Make the compost of rough pieces of fibrous peaty turf; mix it freely with chopped sphagnum (white bog-moss), broken potsherds, and pieces of charcoal, not smaller than walnuts. Let them be well incorporated when used. If a small quantity of half-decayed leaves and rotten wood be handy, they may be used with advantage. *Potting* should be done about March, just when the plants begin to show symptoms of growth. Let the pots either be new, or very well washed, previously to being used. The new ones would be all the better for an hour's steeping in clear water, unless they have been exposed some time to showers of rain in the open air. *Drainage*.—As these large, almost succulent-leaved plants are subject to damping off, if any water remain about them for any length of time, it is needful to drain them effectually. First, place a small pot, inverted, over the hole at the bottom of each pot. If there are more than one, which in large pots for large specimens is generally the case, use as many small pots as there are holes in the bottom. Fill round this pot, or pots, large quantities of broken potsherds; let these cover the small pots about half-an-inch; upon them place a quantity of smaller crocks, or broken potsherds, so high, as, at least, to half fill the pots. Cover them with some charcoal, and then fill up with the compost, nearly level with the rim. When all this is done, take the plant to be potted carefully out of the old pot, preserving every living root without injuring it in the least, if possible. Set it in the centre of its new pot, keeping it elevated, in small plants, one inch, and, in larger, two or more inches above the rim of the new pot. Fill round each plant with the fresh compost, pressing it down gently to make it firm about the plant. As the leaves are of considerable weight, it will be necessary, in order to keep them firmly upright, to place stoutish sticks to each leaf;

place them behind each, so as to be seen as little as possible; tie a piece of broad soft bass mat to each stick, of sufficient length to embrace the leaf; bring it round the leaf, and tie it rather close on the front of the leaf. These sticks will keep the plants steady till they make new roots, and take such hold of the compost, as will enable them to support themselves without the stick, which may then be removed. As soon as they are all potted and tied, give a good watering, and replace the plants in the orchid-house. Place them in such part of it as is not quite hot enough for the *Arides*, *Saccolabiums*, and similar plants, and yet warmer than will suit *Cattleyas*, or plants from the hills of Guatemala; there let them remain and grow strong till they show flower. Their treatment, when in that state, as well as the treatment of the *second section*, must be deferred till the next paper.

T. APPEBY.

FLORISTS' FLOWERS.

MR. GLENNY ON FLORISTS' FLOWERS.

AT THE SURREY ZOOLOGICAL GARDENS there were four seedling GERANIUMS exhibited in fine condition. They were shown for the prizes given by Mr. Lockner, and also for certificates; and they were thus placed:—*Optima*, first; *Ariadne*, second; *Enchantress*, third; and *Rubens*, last; the first three had certificates. We have had occasion to notice these flowers before, but they were in fine condition on this occasion. *Optima*, dark and crimson; *Ariadne*, lighter; *Enchantress*, more approaching a red shade; and *Rubens*, more purple in the tint. Anybody may safely grow all four, if they do not come out at too high a price. *Rubens* is of a good general form, but the upper petals crumple a good deal. A fancy Geranium, Ambrose's *Richard Cobden*, is not so new in colour as it is good in form; but it is an improvement, and was awarded a certificate.

PANSIES.—Of these there were several novelties; *Swansdown*, a white, and *Black Diamond*, a black, were awarded certificates. The former is a yellowish white, and no advance on *White Sergeant*, as a white; if it gains a trifle in form, it loses it in colour. *Black Diamond* is unquestionably the darkest self we have; it was shown out of condition, and small, but there is every chance of its being useful on account of its colour, notwithstanding an indentation in the lower petal. *National* was exhibited. This is a noble flower, of excellent general character; the field a straw colour, but all alike. This will be among the most striking of show flowers; for although we should prefer a pure white or a pure yellow, a cream colour, or pale straw colour, equally pure, has nothing to disqualify, except in class showing, where it must be excluded, because it is neither yellow nor white. A very striking pink *Optima* was exhibited in great numbers, perhaps thirty or forty blooms. It is a great acquisition, very full of petals, beautifully laced, and the form above the average. We should have liked the edges smoother and more obtuse, but there is too much good about it to reject it for a fault or two. It had a certificate. A certificate was also granted to a flower not to be looked at the same day.

A seedling RANUNCULUS, called *Madona*, was shown among others. It was thin, but a very striking colour, and the petals were of the very best character. The edge was the brightest scarlet we know of. This had no certificate.

SOME VERBENAS were shown, the best of which was *Cynthia*, a large whitish variety, with a dull, rosy eye, but a very deep notch.

ANTIRRHINUMS were shown in abundance, as coarse and ugly as can be imagined. This flower is becoming quite a weed—every move seems for the worse; not one

in a thousand is so good as the old *Pictum*, which is bright red on a white tube.

NATIONAL FLORICULTURAL SOCIETY.—Mr. Hoyle's Geranium, *Optima*, was distinguished on this occasion by a first class certificate; we have noticed this flower before. *Rubens*, *Enchantress*, and *Ariadne*, had certificates, not of the first class, and *Attraction* was commended. The distinctions are:—The first class certificate intended to be awarded to really fine novelties of good property; certificates, without the words "first class," are given, or rather professed to be given, to good novelties that are worthy; and commendations to things having some one good point, which is mentioned in the award. *Optima* is, therefore, set down at the highest value that can be put on a flower by the society. Three others, at average good general character, and a fifth, is commended for its colour. We have no fault to find with these awards further than this remark conveys, what could they have awarded to *Optima* if it had been better? For, be it remembered, it is not without its faults.

The Pansey, *Kossuth*, sent by Mr. Rogers, was shown in capital condition, and received a certificate. It is, as we have stated, a self, and we are glad we saw it shown without any indentation on the under petal. *Richard Cobden*, a fancy Geranium, which we have already mentioned favourably, had a certificate. The Pink, called *Optima*, had a first class certificate. This is a fine, full pink, which everybody will want to grow; but we should have been better prepared for the highest award had the inner petals been more obtuse; a certificate, without the words "first class," would have pleased us better, unless the society have, in the background, a yet more distinguished honour for things that may come better. The Pink, *Mrs. Maclean*, is a remarkable colour and style, but it is too flat and thin; nevertheless, if any flower is likely, from its novel appearance and the absence of any grievous fault, to have many buyers, *Mrs. Maclean* is that flower. The purple is new. It was not noticed, but it might safely have been commended for its novelty. The Pansey, *Swansdown*, a yellowish white, had a certificate. We noticed this at the Surrey. VERBENAS.—Of these Mr. Smith exhibited two; one, a well-formed blue, fine flower, with large truss, broad petals, and as good a form as we possess; this was called *Orlando*, and had a certificate, which it deserved; the other was larger and brighter than *St. Margaret's*, but with all its size it was deeply notched, and the indentations conspicuous; it was commended; this was called *Kook-i-noor*. Abundance of worthless Antirrhinums, Petunias, Calceolarias, fancy Geraniums, and other subjects, of no interest whatever.

PANSIES (*Kossuth*).—Three blooms of this Pansey, *Kossuth*, received from Mr. Rogers, came in good order and in good time to compare it with all our best selfs, with which it may fairly range; but in all three of the flowers there is an indenture on the under petal. This, however, may not be permanent.

SEVEN SEEDLING PANSIES (*Oxford*).—Not one worth naming. We cannot undertake to judge in the country at such short notice; we are full of engagements till the 7th of July.

(W.)—Send *Advertisements* direct to the office on or before every Thursday to appear the next Thursday.

CALCEOLARIAS.—Many Calceolarias have reached us this week, but none at all approaching a good one. One could easily fancy they were all from the same seed.

ROSES (*A.D.*).—No. 1 is *Striped Unique*, and a very fine rose it is, but not new. Nos. 2, 3, and 4, are too thin to do any good.

PANSIES (*Emily*).—You must persevere. Numbers 3 and 5 are good for nothing as varieties, but you will do well to throw all the rest away immediately, and save

seed from those two; one is very round and very flimsy; the other is an ill-shape, but very thick. Let not another be near them. We do not mention the full name of a correspondent when our decision is unfavourable. G. G.

FLORISTS' FLOWERS EXHIBITED AT THE ROYAL BOTANIC GARDEN, REGENT'S PARK, JUNE 11th.

In addition to those we noticed at Chiswick, it is only necessary to particularise the following:—

PINKS.—A splendid stand of twenty-four cut blooms was exhibited by Mr. Wilmer, of Sudbury, in fine condition. They consisted of *Blackheath Rival*, Harrison's *Jenny Lind*, Hooper's *Merope*, Ken's *Harriet*, *King of Purples*, *Lord John Russell*, *Lola Montes*, *Morning Star*, Smith's *Whipper-In*, Wilmer's *Laura*, Wilmer's *Surplice*, Young's *Lady Mildmay*, &c., &c.

RANUNCULUSES were exhibited, in fine condition, by Mr. Carey Tyso, of Wallingford, 1st.; and Mr. Mitchell, of Brighton, 2nd. The best varieties were:—*Amasis*, *Apollo*, *Alexis*, *Berinus*, *Burns*, *Carouse*, *Coronation*, Costar's *Apollo*, *Dr. Channing*, *Delectus*, *Dr. Niell*, *Exhibitor*, *Felix*, *Faustina*, *Festus*, *Gomer*, *Hephzibah*, *Highland Venus*, *Irreproachable*, Kilgour's *Queen*, *Lambton*, *Lady Dartmouth*, *Milo*, *Margaret*, Mrs. Nielson, *Naxara*, *Olympia*, *Protector*, *Princess*, *Regent*, *Saladin*, *Sabina*, and *Xerxes*.

FLORISTS' FLOWERS CULTURE.

THE FUCHSIA.—The term "florists' flowers" has been defined as any species of flower that has been hybridized; and the size, colour, and form thereby permanently improved. That this improvement has taken place with the fuchsia is manifestly true. We perfectly remember the delight with which we first cultivated the original species *F. coccinea*,—how anxiously its first blossoms were waited for, and the pleasure they afforded when their scarlet sepals and purple corollas expanded to the view. This species is now very rare, so much so, that the present generation of fuchsia growers would scarcely recognise it, and would not think it worth growing. The story, and we believe the true one, of its introduction, by a sailor bringing it to his mother, who lived somewhere in Wapping, and in whose cottage-window it bloomed for the first time in Britain, if not in Europe; and of its being observed in that situation by the late Mr. Lee, who emptied his pocket of all its contents as its purchase price, to the astonishment of the old lady, who, with some difficulty, even for such golden considerations, was tempted to part with it, has appeared in print before, but we forget where; and it will, no doubt, raise a smile on the face of such men as Smith, Storey, and others, who have brought the fuchsia to its present state of almost perfection, according to our present ideas.

Propagation.—By Seed.—The great use of raising fuchsia from seed is to improve upon the varieties we at present possess. Now, in order to accomplish the end aimed at, it is necessary to adopt such methods as experience tells us have been successfully followed to produce that end. If we wish to improve the form of any flower capable of being so improved, we must save the seed from such as possess the best form at present in existence. If the colour or colours are to be improved, the pollen of some variety that comes nearest to the desired colour, should be placed upon the stigma of one that has the same desirable colour also. Again, if size is the object aimed at, the largest-flowered, with the proper colour, should be the female parent, hybridized with pollen from another variety, with as large flowers as are in existence. The fine fuchsia named *Spectabilis*, is one very likely to afford pollen that will materially

increase the size of our present race of fuchsia. Though shy to flower, yet, by applying its pollen to a more freely-flowering variety, no doubt a progeny would be raised as prolific in bloom as any already in existence. The seed thus raised by cross impregnation should be carefully gathered when ripe. As the seeds are enveloped in a pulp, it is necessary, in order to preserve it, to cleanse it effectually. This is easily done by washing; bruise the berries with the hand, and mix them with water; as soon as the pulp is all washed off, pass the liquor through a hair-sieve fine enough to catch the seed, wash it repeatedly till it is quite clean, then dry it gradually; put it up in brown paper, and keep it in a dry room till spring. Sow it early in March in a light sandy loam and peat, cover slightly, and place the pots in a gentle hotbed. When the seedlings are half an inch high, transplant them in rows across pots five inches wide; these will hold about twenty or thirty plants each, and then replace them in the hotbed. In these pots they may remain for a month or six weeks, and then they will require potting off singly into 3-inch pots. Place them for a few days in a cold frame, kept pretty close and shaded till fresh roots are formed, and they are able to bear the full light, and a moderate admission of air. Give plenty of the latter as they acquire strength, and when the pots are full of roots give another shift into 4-inch pots, and let them remain in these last till they flower. Many of them will flower the first year, and then is the time to make a selection, which naturally brings the consideration, of what are the desirable *properties of a first-rate fuchsia*.

Commencing with the tube, a first-rate Fuchsia, should be well-proportioned, neither too thick, nor too short, nor too long; one-and-a-half inch is a fair length, but if it is stout in proportion, two inches might be allowed; the sepals or flower-cups should stand at equal distances, and should be broad at the base, gradually tapering to the end; they should be reflexed a little above the horizontal line, but not turned up so high as nearly to meet the tube; the corolla should be large and well-rounded at the end, so that when the flower is turned up it may have the appearance of a little cup; the stamens and anthers at the top of them should project well out of the corolla; and the filament bearing the stigma must project considerably beyond the anthers; the stigma itself should be larger than the anthers, and should be of a clear white, so as to contrast well with the purple or crimson corolla. The colours should be clear and bright; the tube would be improved if of a waxy appearance, bright, and shining. If white, that white should be pure, not a wishy-washy, pinkish white, but clear as the driven snow. The corolla should be of the deepest azure blue or purple, or if of darker colour, it should be a scarlet crimson, clear and shining. Some consideration, also, must be given to the flower-stalk, which should be long enough to allow each flower to be seen distinctly from amongst the leaves. The habit of the plant itself must be attended to; it should be rather dwarf than tall, and should produce bloom when a foot high. Take all these properties into the mind's eye, and select such out of the batch of seedlings as come quite up to the desired standard, and the rest may either be cast away, or planted in the borders of the flower garden. The selected ones should be repotted, and grown on to the end of the season to prove them. Cuttings may be taken off, and propagated of the best, and the whole kept in the coolest part of the greenhouse during the winter. Fuchsia culture to be concluded next week.

T. APPLEBY.

MISCELLANEOUS INFORMATION.

OUR VILLAGERS.

By the Authoress of "My Flowers," &c.

THE farmer who rented the land which Farmer Steady now occupies is a very different character, and it may be useful to sketch his history, and observe the results of his way of bringing up his son, and the sad and fatal consequences of evil doing, both to himself, and those connected with him. It is an old, common saying, that "a man's sin will always find him out;" and it is very true, scripturally true, that whenever we commit sin, the wrath of God will fall upon us.

Farmer Wilful was an industrious, pains-taking man from his youth, and by no means trying to appear a gentleman, and he is still a capital farmer of the old school,—his land always looked like a garden; and he was a contented man, as regarded weather, never complaining or vexing himself about losses, when he had done his best, or rain or drought injured him. He was also a good master, paying his people regularly, and always on Friday nights, that their wives might lay out the money on Saturday, instead of having to go to the shop late at night, or being tempted to break the sabbath. He was also a regular attendant at church, and his wife and children were the same. All this was well; yet there was "one thing" lacking, and that one thing ruined him.

Farmer Wilful had three sons. The eldest was his more peculiar charge, and he brought him up in his own way; the two younger ones were given up to their sensible, right-minded mother.

John, the eldest, was allowed to grow up in a way that is never right, even for gentlemen. He was allowed to amuse himself as he liked,—to hunt and shoot, and waste his precious time in unprofitable amusements, instead of following the plough, and gaining an honest livelihood. His two brothers were busy on the farm; but he was a "gentleman," and did only what he liked to do. Farmer Wilful was a man of money, which he had carefully made; he rented two contiguous farms,—one of them of considerable extent; and when his eldest son choose to "settle," he rented another property at £1000 a year, and placed him in it.

In the meantime, the mother was bringing up her younger sons in a different manner. Her little savings enabled her to set apart £20 for each of them, with which they began to traffic in sheep; and, having no idle propensities, they went quietly on, until, in the course of time, when each wished to settle in life, they had made more than £1200 apiece. Their fondness for their mother was great. Her domestic trials were heavy, but they both stood by her, and strove to show their sense of what she had done for them.

Farmer Wilful's day of prosperity closed sooner than he expected. His eldest son's extravagance, in a few years, led to his ruin; and, to save himself from prison, he made all his effects over to his father, and cheated his creditors, of course. This was the beginning of evils. He became dependant upon his parents, with a wife and several children; could do nothing for his own support, because no one would trust him, indulged in a mode of life far beyond what his father, who had already suffered through him, could meet, and was at length obliged to live as poorly as the labourers he formerly employed. Farmer Wilful's affairs grew worse and worse. He was a man whom no one liked or spoke well of, and he met, therefore, with little sympathy in his distress. Such nefarious transactions came to light, that his landlord would not suffer him to retain his farm, and he quitted it under great disgrace. In fact, he became a bankrupt; and has since become, to use his afflicted wife's expression, "the servant of his son," of one of the younger sons, whose little property arose from his mother's prudence, and who has now placed his father in a small farm to manage it for him.

There was no fear of God before the eyes of Farmer Wilful. He kept up appearances well, but the "heart set aright" was not within him. At the very best of times, when he was a thriving man, his face was against him,—it was heavy, sour, and sullen; it betokened no comfort nor

peace; and he looked as if he would rend any one who offended him. If people were civil to him, and treated him well, he would treat them well in return, but there it ended. Now, this is not scriptural conduct; it does not spring from a scriptural root, and brings no blessing in its train. To obey the scriptural precept, we must love those who do not love us, and we must do good to those who do not always do good to us. If we only gratify our own feelings, and do kindly or unkindly according to our neighbour's deserts, "do not even the Publicans the same?"

Farmer Wilful always looked sullen and unhappy. When a man is not walking with God, he cannot be happy, and, therefore, cannot look so. Some persons have pleasanter countenances than others, better features, and milder tempers; but look closely into them, study them, and there is, beneath the smile, an uneasy, anxious expression, which cannot be mistaken, and which speaks of inward care. The world is so unsatisfying in its very kindest words, that unless we have "a good hope through grace" of better things to come, it is impossible to find the commonest peace of mind.

The contrast between the past and present tenant is very striking. The one dark, and stern, and sad; the other open, and bland, and happy, with a kindly word for all, and a kindly will besides. The latter sits peacefully and thankfully among his steady, middle-aged sons and daughters, all smiling round him, the very picture of green old age. No sounds are ever heard about the homestead, but those of lawful labour; and the only disturbance arises from rats and a peacock, whose glittering throat is stretched out to dart at the poor little chickens, whenever he can catch them in a sly way. These are the simple troubles of this peaceful family. The quiet, honoured sabbath closes with "psalms, and hymns, and spiritual songs," and the labours of the busy week seem to be greatly blessed. How different from the days of Farmer Wilful and his ruined son!

I have given my readers a second glance through the casement that nestles among thick, rich ivy, but I am sure they will not be displeased. Honest English comfort shines brightly and pleasantly among her honourable agriculturists; and all who follow the example of good Farmer Steady, and avoid the evils into which Farmer Wilful fell, will have great cause to sing hymns of praise to Him who has preserved them from many sorrows, and caused them to lie down and rise up in peace.

ROYAL BOTANIC SOCIETY'S EXHIBITION,
REGENT'S PARK, JUNE 11TH.

As this exhibition followed so closely upon that at Chiswick, as might be expected, most of the plants were the same as were exhibited there; but some additions were necessary, because the grand collection, both of orchids and miscellaneous plants, was larger than at Chiswick. For instance, the large collection of orchids was increased from 20 at Chiswick to 25 at the Park; and the large collections of miscellaneous plants were increased from 20 at Chiswick to 30 at the Park. These additions, with some little changes, will be the extent of our report. Our readers must remember that, though not mentioned here, the fine plants described in our report of the Chiswick exhibition the Saturday before, were present here also.

ORCHIDACEOUS PLANTS.

Ten collections, containing 170 plants.

PRIZES.—Collections of 25: first, Mr. *Mylam*; second, Mr. *Franklin*, gardener to Mrs. Lawrence; and an equal prize to Mr. *Williams*, gardener to C. B. Warner, Esq., Hoddesden. Collections of 20 (Nurserymen): first, Messrs. *Veitch* and *Son*, Exeter; second, scarcely inferior, Messrs. *Rollison*, Tooting. Collection of 15: first (the only competitor), Mr. *Blake*, gardener to J. Schroeder, Esq., Stratford. Collections of 10: first, Mr. *Barnes*, gardener to R. Hanbury, Esq.,

of the Poles, near Ware; second, Mr. Carson, gardener to W. G. F. Farmer, Esq., Nonsuch Park, Cheam; third, Mr. Woolley, gardener to H. B. Ker, Esq., Cheshunt; fourth, Mr. Green, gardener to E. Antrobus, Esq., Cheam.

- AERIDES MACULOSUM* (Williams), three spikes.
 — *ODORATUM MAJOR* (Williams), 30 spikes.
 — *ODORATUM* (Woolley).
 — *CRISPUM* (Barnes).
 — *ROSEUM* (Barnes), one fine long spike.
BARKERIA *SPECTABILIS* (Barnes), six beautiful spikes.
CATLEYA *BULBOSA* (Mylam), one fine high-coloured handsome flower.
 — *INTERMEDIA PURPUREA* (Franklin), four spikes.
CHYSIS *BRACDESCENS* (Mylam), 20 flowers.
CORYANTHES *MACRANTHA* (Rollison's), with one large, singular, and beautiful flower.
CYPRIPEDIUM *SPECTABILIS* (Barnes), 17 large handsome flowers, a noble specimen.
CYRTOCHILUM *STELLATUM* (Rollison), 12 spikes.
DENDROBIUM *DEVONIANUM* (Veitch), grown on a basket, with nearly 100 drooping spikes.
 — *DALHOUSIANUM* (Rollison), four fine spikes.
 — *CALCEOLARIA* (Carson), a large finely-bloomed plant, with numerous spikes.
 — *CHRYSANTHEMUM* (Green).
 — *MOSCHATUM* (Rollison), numerous spikes.
EPIDENDRUM *AROMATICUM* (Veitch), one large drooping much-branched spike.
LÆLIA *MAJALIS* (Veitch), rarely seen, one flower, large and beautiful.
LYCASTE *DEPPEI* (Mylam), a mass of pretty flowers.
MILTONIA *KARWINSKII* (Mylam), rare, an upright spike, much-branched, of beautiful flowers.
ONCIDIUM *ALTISSIMUM* (Green).
 — *LANCEANUM* (Williams), four spikes.
 — *LEUCOCYLUM* (Veitch), one long much-branched spike.
PHALÆNOPSIS *GRANDIFLORA* (Barnes), seven spikes, a large healthy plant.
SACCOLABIUM *GUTTATUM* (Barnes), seven spikes.
STANHOPEA *TIGRINA SUPERBA* (Rollison), eight large flowers.
VANDA *TERES* (Barnes), four fine spikes.
 — *TRICOLOR*, true (Mylam), two spikes.
 — *ROXBURGHII CERULEA* (Williams), eight spikes. (Woolley), three spikes.
 — *RUBRA* (Franklin), four spikes.

COLLECTION OF MISCELLANEOUS, STOVE, AND GREENHOUSE PLANTS.

Ten collections, containing 200 plants!!

PRIZES.—Collections of 25: first, Mr. May; second, Mr. Coles, gardener to H. Collyer, Esq., Dartford; third, Mr. Stanley, gardener to H. Berens, Esq., Sidcup, Kent. Collection of 20: first, Mr. Green; second, Mr. Taylor, gardener to J. Costar, Esq., Streatham, and Mr. Frazer, equal; third, Messrs. Pamplin and Son, Lea Bridge Road. Collection of 10: first, Mr. Williams, gardener to Miss Trail, Hayes, near Bromley; second, Mr. Speed, Edmonton; third, Mr. Croxford.

- ÆCHMEA* *FULGENS* (Stanley).
ALLAMANDA *CATHARTICA* (Cole), 5 ft by 3 ft. (Taylor), 5 ft by 3 ft.
 — *GRANDIFLORA* (May), 5 ft by 4 ft, a large well-bloomed plant.
ADENANDRA *FRAGRANS* (Green), 2½ ft by 2½ ft. (May), 2½ ft by 2 ft.
APHELEXIS *SPECTABILIS* *GRANDIFLORA* (Taylor), 2½ ft by 2 ft.
 — *MACRANTHA* *ROSEA* (Taylor), 2½ ft by 2 ft, covered with bloom, fully expanded.
 — *SESAMOIDES* (Green), 2½ ft by 2 ft, extra.
 — *PURPUREA* *GRANDIFLORA* (Williams), 3 ft by 2½ ft.
AZALEA *FORMOSA* *ELEGANS* (Taylor), 3 ft. by 2½ ft, splendidly bloomed.
 — *LATERITIA* *GRANDIFLORA* (Frazer), a finely-bloomed plant.
 — *OPTIMA* (Stanley), a neat small plant.
BOBONIA *PINNATA* (Taylor), 2½ ft by 2 ft, fine.
CHOROZEMA *BILOBA* *MAJOR* (May), 2 ft by 2½ ft, a densely-flowered specimen. (Williams), 2 ft by 2 ft.
COLEONEMA *RUBRA* (Croxford), 2 ft by 2½ ft, a gracefully-drooping plant.
CHIRONIA *GLUTINOSA* (Cole), 3 ft by 3 ft, well flowered.
DIPLADENIA *CRASSINODA* (Speed), 4 ft by 2½ ft, many bright rosy flowers.
DILWYNIA *CONFERTIFLORA* (May), 2 ft by 2 ft.
EPIPHYLLUM *ACKERMANNII* (Stanley), 14 flowers.
 — *SPECIOSUM* *ELEGANS* (Green), 3 ft by 2 ft, a beautiful variety, with deep rosy flowers.
ERICA *CAVENDISHII* (Croxford), 2½ ft by 3 ft, well bloomed.
 — *BERGIANA* (Pamplin), 2½ ft by 2 ft, densely flowered.
 — *FLORIDA* (Taylor), 1½ ft by 1½ ft, covered with bloom.
 — *PERSPICUA* *NANA* (May), 2 ft by 2½ ft. (Frazer), 2 ft by 3 ft, an extra densely-flowered bush.
 — *TRICOLOR* *WILSONII* (Cole), 2½ ft by 2½ ft.
EPACRIS *MINIATA* (Pamplin), 2 ft by 2 ft, highly coloured.
FRANCISCEA *ANGUSTA* (Cole), 2½ ft by 2 ft.
 — *ACUMINATA* (Williams), 2½ ft by 2 ft.
IXORA *JAVANICA* (Green), 2 ft by 2½ ft, a fine specimen, but scarcely in full bloom.
 — *CROCATA* (Taylor), a low densely-flowered bush.
LESCHENAUTIA *BILOBA* *MAJOR* (Williams).
 — *FORMOSA* (Williams), 2 ft by 2½ ft, highly coloured.
PIMELEA *HENDERSONII* (Frazer), 3 ft by 3 ft, the best in the exhibition. (Williams), 2½ ft by 3 ft, a good plant. (Stanley), a small neat plant.

- POLYGALA* *ACUMINATA* (Frazer), 4 ft by 4 ft, a handsome plant.
 — *DALMAISIANA* (Green), 2 ft by 2½ ft. (May), 2 ft by 2 ft.
RONDELETIA *SPECIOSA* *MAJOR* (May), 3 ft by 2½ ft. (Green), 2½ ft by 2 ft.
SPHENOTOMA *GRACILE* (Cole), 3 ft by 2½ ft, many heads of pure white fragrant flowers. (Frazer), 3 ft by 2½ ft, ditto.
SCHUBERTIA *GRAVEOLENS* (Speed), 4 ft by 3 ft, well-grown and full of flower.
STEPHANOTIS *FLORIBUNDA* (Taylor), 5 ft by 3 ft, neatly trained and well-flowered.
TETRATHECA *VERTICILLATA* (Green), 2½ ft by 3 ft.
VINCA *ROSEA* *ALBA* (Stanley), a neat prettily-flowered plant, 2 ft by 2 ft.

CAPE HEATHS.

Generally speaking, they were the same plants as we noticed at Chiswick, but as there were two or three exhibitors who did not show there, we shall briefly describe their plants, as well as a few others.

Eleven collections, containing 112 plants.

PRIZES.—Collections of 15: first, Mr. Smith, gardener to W. Quilter, Esq., Norwood; second, Mr. Cole. Collections of 12: first, Messrs. Rollison; second, Messrs. J. and J. Fairbairn, Clapham; third, Messrs. Frazer. Collections of six: first, Mr. May; second, Mr. Williams, gardener to Miss Trail; third, Mr. May, gardener to Mrs. Lawrence, and Mr. Taylor (equal); fourth, Mr. Ivison.

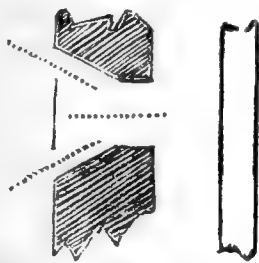
- ERICA* *BEAUMONTII*.
 — *CAVENDISHII* (Ivison), 2 ft by 2 ft, well-bloomed.
 — *CLUSIANA* (Williams), 2 ft by 1½ ft.
 — *DAPHNOIDES* (May, gardener to E. Goodheart, Esq.), 3 ft by 3 ft.
 — *DENTICULATA* *MOSCHATA* (May), 2½ ft by 3 ft.
 — *DEPRESSA* (Williams), 2½ ft by 2 ft.
 — *JUBATA* (Rollison), 2½ ft by 2 ft, rare and beautiful.
 — *MASSONII* (May, gardener to E. Goodheart, Esq.), 2 ft by 2 ft, well bloomed.
 — *ORBATA* (Ivison), rare and beautiful, 1½ ft by 1½ ft.
 — *PERSPICUA* *NANA* (Williams), 2 ft by 2 ft. (May, gardener to E. Goodheart, Esq.), 3 ft by 2½ ft.
 — *SPRENGELII* (Ivison), 1½ ft by 1½ ft, a beautiful variety.
 — *TRICOLOR* *ELEGANS* (May, gardener to E. Goodheart, Esq.), 2½ ft by 2 ft. (Williams), 3½ ft by 2½ ft.
 — *AMABILIS* (Rollison), 2½ ft by 2½ ft, a splendid variety.
 — *TRICOLOR* (Williams), 3 ft by 3 ft, (May, gardener to Mrs. Lawrence), 3 ft by 2½ ft.
 — *VENTRICOSA* *GRANDIFLORA* (Williams), 2 ft by 2½ ft.
 — *MAGNIFICA* (Rollison), 2½ ft by 2 ft, the finest of all the *ventricosas*.
 — *BREVIFLORA* (May, gardener to Mrs. Lawrence), 2½ ft by 2 ft.
 — *SUPERBA* (ditto), 3 ft by 3 ft. (Ivison), 1½ ft by 1½ ft.

NEW and RARE PLANTS appeared in considerable numbers, and were very interesting; Messrs. Veitch and Sons were the principal exhibitors. The most remarkable and likely-to-be-useful plant was their new *Cantua dependens*, a shrub of graceful habit, with pendant tubular flowers, four inches long, trumpet-shaped, and of a beautiful rose and orange colour. The next was their *Dendrobium Veitchianum*; but for the habit of the plant, this would never be taken for a *Dendrobium*; it is a valuable addition. Also, *Calceolaria suaveolens*, quite a little bush, with sulphur-coloured, not very showy, flowers. Also, *Gloxinia Marie Van Houtte*, a large well-shaped flower, something like Henderson's *G. grandis*, and *Bolbophyllum Lobbii*. Mr. Cole showed a small plant of *Ixora salicifolia*, not new, but rare; a desirable orange-flowered species. Messrs. Henderson had *Gompholobium cuneatum*, a plant well suited for exhibition purposes; and *G. intermedium*, with orange scarlet flowers. Mrs. Lawrence, Ealing Park, exhibited a new species of *Acineta*, from New Grenada; the lip and petals are yellow, richly spotted with purple; the spikes were nearly a foot long. Messrs. Rollison exhibited a new *Aphelexis*, with large light rose-coloured flowers, and their new heath *E. eximea superba*. Mr. Green sent a splendid specimen of the new *Epiphyllum crenatum grandiflorum*. Mr. Ingram, Royal Gardens, Frogmore, had *Begonia Ingramii*, with rosy flowers. Mr. Mylam had *Saccolabium speciosum*, with short spikes of small flowers; their beauty lies in the bright rose-coloured lip. Among plants of economical interest, Messrs. Rollison showed a large plant of *Schizolobium glutinosum*, but what economical use it could be put to was not mentioned.

ROOM CHIMNEY-VENTILATOR.

The great objection to Arnott's ventilator, otherwise a most useful and important invention, is, that if not very accurately adjusted, the smoke is apt to pass into the room through the aperture. Another objection to it is, that in the

common sorts, the valves being very roughly made, and not being provided with soft leather to deaden the noise, the clank-clanking of the valve shutting and opening continually by the action of the currents is very annoying. The design given in the present article, the invention of Mr. Bryan, of Edinburgh, is one in every way worthy of general adoption. A recent writer on ventilation, *Burn's Practical Ventilation*, says, "a more elegant (in principle), simple, and thoroughly efficient contrivance, could not be adopted for the ventilation of private apartments. It is decidedly by far the best we have yet seen or examined." The way to make the ventilator is as follows:—Make a hole within a few inches of the ceiling, as near it as possible, in the chimney breast, or that part of the wall above the fireplace. For a room of twelve or fourteen feet square, a hole of six inches diameter will be sufficient:—suppose the thickness of wall to be twelve inches; widen out the side nearest the room to a diameter of twelve inches outside, and sloping funnel-shaped, as shown in the sketch; so that half of the



thickness of the chimney breast, or six inches, shall be left of the diameter of the original hole, or six inches. Make a zinc funnel to fit this funnel-shaped hole in the wall, and fasten it therein by good cement. At the large end in the apartment, fix a lid, or cover, hinged on one side, and fastened on the opposite side by a small knob. The whole of this

lid must not be solid, but a centre piece of diameter larger than the small hole only:—suppose the hole in the wall, nearest the chimney, to be six inches, the solid centre piece of the cover should be six-and-a-half inches diameter; and care should be taken to have this centre piece exactly opposite the hole. Round the solid centre piece, pierce a number of small holes, or make this part of perforated zinc.

Thus fitted up, the action is as follows:—By a reference to the figure, the bad air from the room is seen passing in by the dotted lines, through the small apertures in the cover, and by the upward current in the chimney, pulled along the tube and delivered up the flue. If a blow down should take place, and force the smoke along the tube towards the room, it strikes against the solid centre piece, expands in the wide part of the funnel, and is carried back to the chimney by the force of the renewed draught. If the blow down is apt to be continuous in any chimney in which this is fixed, a "top" must be placed at the outside of the chimney flue to prevent these down draughts. We shall, in the present series, shew an admirable and cheap contrivance for this purpose. Where the chimney is what is called a "good drawing one," a better ventilator than the one we have described could not be adopted: there are no moving parts which are liable to be deranged, and once set up it continues working without further supervision. Where put up they have been eminently successful.

B.

KILLING WEEDS ON GRAVEL-WALKS.

I FIND the best thing to kill small weeds and lichen, on fine-rolled gravel-walks, is vitriolic acid; the common material used in manufactories, at about a shilling a gallon. Get an old thrum-mop, and dip it into a bucket of water infused with about a quart of the acid, or as much more as you chose to afford; lightly dab the wetted mop on the tops of the weeds in the walk, and the acid will effectually kill them. Avoid the box-edgings by using as little liquid as possible. But as ladies' dresses and shoes are in danger from the operation, the walk should be stopped up until a good shower of rain falls, or if you get a bucket of water the next day, infused with the common washing soda, and apply it in the same manner with a mop (but rather more plentifully) you neutralize and render harmless the acid; but not until after it has killed the weeds. I am not now referring to thoroughly untidy walks full of weeds, but to neat walks partially infected with them. A WORCESTERSHIRE MAN.

TO CORRESPONDENTS.

YELLOW ROCKET.—Will S, who offered slips of this, oblige us with his address.

LIQUID MANURE (A Novice).—No "chemical liquid manure" is

equal to that made from sheep's-dung, of which you could obtain a supply from any butcher. Your garden having been long out of cultivation, should be for that reason more fertile than if hard cropped, but if still "poor," be assured nothing will grow there satisfactorily until you have improved it by a good dressing of slowly-decomposing manure, such as that from stables. The best "chemical liquid manure," is sulphate of ammonia, but it must be applied very weak, a quarter of an ounce to a gallon of water, and this will not be a recompence for a deficiency of decomposing matters in the soil.

WILD FLOWERS (H. M. B.).—There is no "cheap, yet illustrated and comprehensive work on English Wild Flowers." Smith's *English Flora* is the best, but it is not illustrated; Sowerby's *English Botany* is highly illustrated, but very high priced; Mrs. Loudon's *British Wild Flowers*, is published in monthly parts, is illustrated, and tolerably comprehensive. You can buy a part and decide for yourself, whether it meets your wishes.

DUBLIN (An Early Subscriber).—THE COTTAGE GARDENER invariably leaves our office on Tuesday, per rail, to be ready for delivery on Thursday. When delay occurs, it must be in the steam-packets, over which we have no control, and we cannot send off earlier than Tuesday. Your *Petunia* is of good form, but not new in colour (straw-coloured self), and the petal is very thin. The great desideratum now in *Petunias*, is to get more substance into the petal. Form and size are already attained.

GAS LIME (K.).—We should not mix gas lime with stable or other dung; but if mixed with earth it forms an excellent top-dressing for grass land, especially if spread just before rain.

TAYLOR'S HIVES (W. Jebbett).—For the advantages of Taylor's Bar Hive, see THE COTTAGE GARDENER, vol. i., page 306, a figure of it is there also given. It would be less expense and trouble to make a Taylor's Bar Hive at once, than to convert a Nutt's into one; indeed, it could not be done correctly. If guide-combs are placed upon the bars, as directed by Mr. Taylor, in his *Bee-keepers' Manual*, the bees will never work across the bars; cork may be used, if you please, for floating in your feeding-pan, but we have had the same piece of wood in use for this purpose for seven years, and it still keeps afloat.

BEES.—A correspondent (S.) says:—"On a vigorous stock of bees I placed, during April, a super, which was not taken possession of until the 20th of May, but by the end of the month it was so nearly filled with comb, that I thought it best, on the 5th of June, to insert between the two boxes, a triplet. Since that time, nothing appears to have been done, but the combs, some of which are sealed, have gradually been deserted, that on the last bar remaining unfinished, and without honey. What is the cause of this cessation from labour? The openings to admit the slides, I found were large enough to admit the bees entrance and exit; for a day or two ago, I saw numbers of bees going in laden with pollen, besides others. Does this prove that brood are in the super? and have I done right to stop up these side entrances? Since doing so, i.e., this morning, I have observed new comb begun in the triplet, but not on the guide-comb. Perhaps, if the floor-board of the super had been removed, the delay would not have occurred? or would it not have been better to have deprived the bees of a comb or two, rather than have given the additional comb? June 24th. On examining proceedings this morning, I find that there is a comb on every bar in the upper box, and that six out of the eight, are the entire length, and down to the floor-board, the remaining two are nearly completed, but most of the comb is empty, perhaps two combs are sealed. There is, what appears to me, a queen's cell there also, it is affixed to the back of the centre comb, and is nearly perpendicular. The bees are now building in the centre box, but not nearly so vigorously as they did in the first super. What would you advise?" The cause of the cessation from labour you complain of, arose from your supplying the triplet too soon; both boxes should have been filled with bees and honey, and signs of swarming shown by clustering at the mouth, before you added the triplet; indeed, it is only to be used in such emergencies, when swarming is anticipated before the proprietor has opportunity to take out a box or two of honey. (Taylor's Bar Hive, we presume, you are speaking of.) You have done right in stopping up the openings; one is quite sufficient, and better than more, for any hive. If you can take out the leaf of comb having the queen's cell upon it, it will be as well, and if it contains brood, cut off the queen's cell, and return the bar with the brood.

BEES (A Country Vicar).—The bees of your "unusually large swarm" will not require feeding. If the "old hive" sends out a cast (the probability of which you may ascertain by the queen's piping) you can hive it into one of Taylor's Bar Hives, and in the autumn unite the bees from the old stock with it. It is probable, though not at all desirable, that your strong swarm will throw off another; if it does, by all means unite it to the cast in Taylor's hive. You did wrong in putting the cap upon the swarm, you should have waited eighteen or twenty days; as it is, you will, in all probability, have it filled with brood, instead of fine honey, as it would otherwise have been.

BEES (H. T.).—Your proposed plan is quite correct, and will answer perfectly. Fuller reply next week.

WATERING (B—le—B.).—You ask if and why "it is injurious to water during hot sunshine," and we reply that it is injurious because it excites the roots to increased absorption, and consequently, the leaves to increased transpiration of moisture; then, immediately after, the surface of the earth becomes caked, and the root-moisture is evaporated; yet the excited leaves go on with their increased transpiring, and flag and parch worse than before. Naturally, abundance of water in the form of rain, never comes to the roots of plants, except when the air is saturated with moisture, so that though there is an increase of water to the roots, less is given off by the leaves. To imitate this dictate of nature as nearly as possible, gardeners give water of an evening just as they are closing their glass, for this secures a damp atmosphere at the same time.

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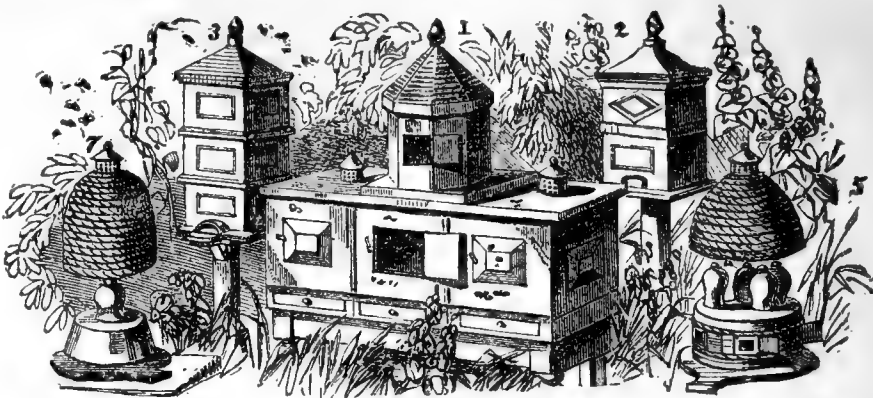
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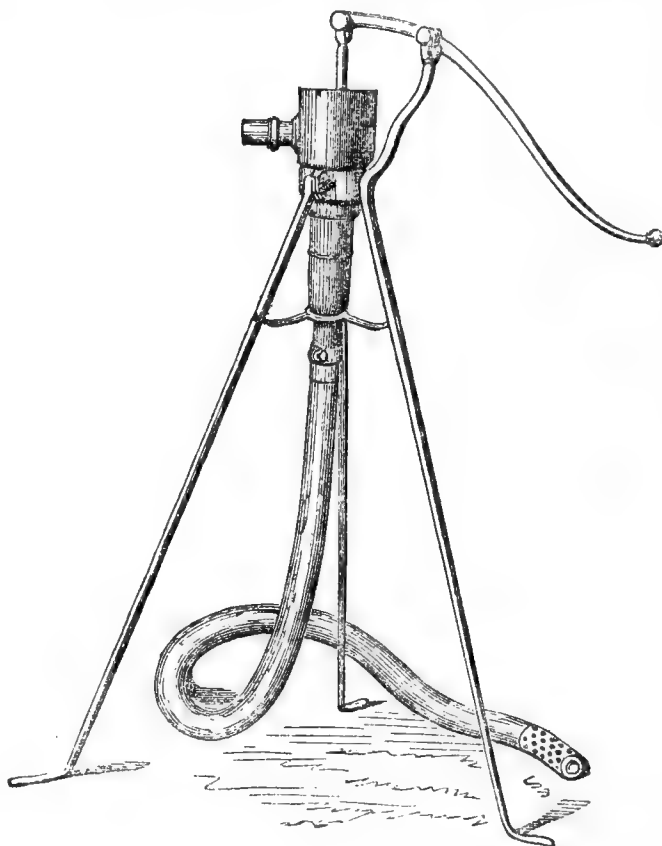
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WEEKLY CALENDAR.

M D	W D	JULY 17—28, 1851.	WEATHER NEAR LONDON IN 1850.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bef. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in In.						
17	Th	Apricots ripe.	29.865 — 29.849	80—54	N.	34	4 a. 4	7 a. 8	10 23	18	5 45	198
18	F	Yellow Centaury flowers.	29.991 — 29.921	76—59	S.W.	37	5	6	10 44	19	5 50	199
19	S	Sun's declin. 20° 53' N.	29.941 — 29.921	67—54	W.	02	6	5	11 3	20	5 54	200
20	Sun	5 SUNDAY AFTER TRINITY.	29.943 — 29.933	66—56	E.	—	8	4	11 22	21	5 59	201
21	M	Wheat harvest begins.	29.946 — 29.938	78—50	S.E.	—	9	3	11 42	22	6 2	202
22	Tu	Wild Cherries ripe.	29.943 — 29.911	85—60	S.	—	10	2	morn.	23	6 5	203
23	W	Horehound flowers.	29.901 — 29.809	88—55	S.E.	15	12	1	0 4	24	6 7	204

IF exterior circumstances and mental accomplishments could render a man supremely happy, HORACE WALPOLE would have passed a blissful life, and Strawberry Hill would have been his terrestrial Paradise. Sufficiently learned, refined in taste, fond of literature, and the fine arts, of wealth wherewith to gratify his inclinations, and surrounded by gifted friends, who shared and aided his enjoyments—what could forbid him saying:—"Take thine ease, eat, drink, and be merry?" Yet it was not so; he was a discontented man. To account for this, we need but know that he was a Christian only in name, and destitute of the "sunshine from within," which that only can bestow, he could withdraw from all the blessings around him, and seated in the halls of his ancestors, write thus:—

"Here I am at Houghton! and alone! In this spot, where (except two hours last month) I have not been for sixteen years! Think, what a crowd of reflections! No, Gray and forty church-yards could not furnish so many; nay, I know one must feel them with greater indifference than I feel I possess to put them into verse. Here I am, probably for the last time of my life, though not for the last time. Every clock that strikes tells me I am an hour nearer to yonder church—that church into which I have not the courage to enter, where lies the mother on whom I doated, and who doated on me! There are the two rival mistresses of Houghton, neither of whom ever wished to enjoy it! There, too, lies he who founded its greatness, to contribute to whose fall Europe was embroiled. There he sleeps in quiet and dignity, while his friend and his foe, rather his false ally and his real enemy, are exhausting the dregs of their pitiful lives in squabbles and pamphlets. When I had drunk tea, I strolled into the garden: they told me it was now called 'the pleasure-ground.' What a dissonant idea of pleasure! Those groves, those alleys, where I have passed so many charming moments, are now stripped up or overgrown: many fond paths I could not unravel, though with a very exact clue in my memory. I met two gamekeepers and a thousand hares! In the days when all my soul was turned to pleasure and vivacity (and you will think, perhaps, it is far from being out of tune yet), I hated Houghton and its solitude. Yet I loved this garden—as now, with many regrets, I love Houghton—Houghton, I know not what to call it, a monument of grandeur or ruin. How I wished this evening for Lord Bute; how I could preach to him! For myself, I don't want to be preached to. The servants wanted to lay me in the great apartment:—what! to make me pass my night as I had done my evening! It was like proposing to Margaret Roper to be a Duchess in the Court that cut off her father's head, and imagining it would please her. I have chosen to sit in my father's little dressing-room; and am now by his escritoire, where, in the height of his fortune, he used to receive the accounts of his farmers, and deceive himself, or us, with the thoughts of his economy. How wise a man at once, and how weak! For what has he built Houghton? For his grandson to annihilate, or for his son to mourn over."

Poor Walpole, for this Tantalus, indeed, deserves our pity to be mingled with our applause of his abilities, lingered on a martyr to the gout until he had entered his 80th year, and died as he had lived, in full possession of a frivolous intellect. Born in 1716, he died on the 2nd of March, 1797, and these boundaries of life must be all that we record here of the usual topics of his biography. What he achieved as a politician, a conisseur, a romance writer, and a correspondent, must be sought for in other works, for we have only space to trace an outline of his sayings and doings in connection with gardening.

His residence, Strawberry Hill, was originally a small tenement, built in 1698, by the Earl of Bradford's coachman, as a lodging-house. Colley Cibber was one of its first tenants; and, after him, successively, Talbot, Bishop of Durham, the Marquis of Carnarvon, Mrs. Chenevix, the toy-

woman, and Lord John Philip Sackville. Mr. W. purchased it, 1747, began to fit it up in Gothic style, 1753, and completed it, 1776. He permitted it to be shown, by tickets, to parties of four, from May to October, between the hours of 12 and 3, and only one party a-day.

Writing to Mr. Conway, in June, 1747, Walpole says:—"You perceive by my date that I am got into a new camp, and have left my tub at Windsor; it is a little plaything-house that I got out of Mrs. Chevenix's shop, and is the prettiest bauble you ever saw. It is set in enamelled meadows with phillagree hedges.

A small Euphrates through the piece is rolled,
And little fishes wave their wings in gold.

Two delightful roads, that you would call dusty, supply me continually with coaches and chaises; barges, as solemn as Barons of the Exchequer, move under my windows; Richmond Hill and Ham Walks bound my prospects; but, thank God, the Thames is between me and the Duchess of Queensbury. Dowagers as plenty as flounders inhabit all around, and Pope's ghost is just now skimming under my window by a most poetical moonlight. The Chevenix's had tricked the cottage up for themselves."

The garden of about ten acres, was laid out chiefly as a fore-ground to a beautiful winding of the Thames, and Walpole's surplus income was devoted too deeply to antiquities, books, and pictures, for a margin to be left for high horticultural disbursements. Writing to Mr. Mason, early in the July of 1774, he says:—"I know nothing but that we have deplorable weather; the sun like you has called but once at Strawberry. To make amends the cold has brought on the winter fruits so fast, that I had a codlin tart to-day, and expect pears and apples ripe before peaches and nectarines. I wish we had never imported those southern delicacies, unless we had brought their climate over too. We should have been very happy with our hips and haws and rainy days, and called it *luxury*. I cannot afford to have hot-houses, and glass-houses, and acres of tanner's bark, as every tradesman has at his villa, or at his mistress's villa. I kill my own strawberries and cream, and can aim no higher."

In 1771, appended to the fourth volume of his "Anecdotes of Painting in England," he printed his *Essay on Modern Gardening*. In this he traces and applauds the gradual progress of Landscape Gardening, and concludes with rejoicing that the mantle of Bridgeman had then descended upon Brown. The latter he lost no opportunity to applaud, and he evidently liked him the better because he thwarted the wishes of George III. "Soon after the news of Brown's death," says Walpole, "had reached the royal ear, he went over to Richmond Gardens, and in a tone of great satisfaction, said to the under gardener—"Brown is dead: now, Mellicant, you and I can do here what we please." "Are you not concerned," he adds, "for the death of Brown? I made a bad epitaph for him, which if you please you may recolour with any tints that remain on your pallet, with which you repainted Fresnoy; here it is:—

With one lost Paradise the name
Of our first ancestor is stained;
Brown shall enjoy unsullied fame
For many a Paradise regained.

I have a mind, should you (Mr. Mason) approve it, to call designers of gardens, *gardenists*, to distinguish them from *gardeners*, or *landscapists*. I wish you would coin a term for the art itself."

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-four years, the average highest and lowest temperatures of these days are 72.6° and 52.2° respectively. The greatest heat, 94°, occurred on the 17th in 1834, and the lowest cold, 41°, on the 19th in 1832. During the period 83 days were fine, and on 85 rain fell.

THE question no longer is, Shall the Glass Pavilion remain in Hyde Park? but, Who will venture to recommend its removal? It has fulfilled its purpose admirably; it has practically refuted nearly all its prophecied defects; the time is approaching when the World's Exhibition must be re-distributed to the four quarters of the globe; and then, who will say that this most splendid, and most vast of glass structures should be torn piece-meal? There is one man—and only one man—who, mistaking obstinacy for consistency, may vote in the House of Commons for such a Vandal-like destruction; but by the hundreds of thousands who have visited this magnificent structure not one hand

would be held up to sustain such an injurious dictate of folly. No right-hearted Englishman, who is conscious of the capabilities of the structure, would vote that his countrymen should be deprived of the vast benefits it is so easily capable of conferring upon them. If, indeed, there be any one who wishes that the invalid should be deprived of a health-restoring place of exercise, and that the metropolitan inhabitant, be he peer or artizan, should have dashed from him a garden from which no inclemency of season could exclude him; if there be such a person, then he will vote for the removal of the Glass Pavilion; and, if he succeeds, the bitterest punishment that his worst enemy could invoke upon him, would be,

that he might have, in a London winter, a sick household, with life or death to it depending upon a change to a milder air.

We will not, however, combat such phantom opposition. The Glass Pavilion will remain where it is; the surplus £100,000 will be vested as a fund for its support; the interior will be converted into a winter-garden; there will be certain high admittance days, but a greater number when the admittance will be low, and, on all occasions, every adult will be permitted to take in two children gratuitously—because, if this were not done, half the benefits would be cut off from large families. The establishment will be self-supporting, and we cannot imagine a single opposition “grunt, growl, or grumble” that can be entitled to the slightest attention.

We might leave the Glass Pavilion's claim to permanency without any other support than it derives from its sanatory uses, but there are other benefits derivable from it that establish its claim still more immoveably. No other structure in the world is capable of enclosing such garden plants, and illustrating such garden culture. Whilst its galleries and side compartments are lofty enough, and yet low enough, for all the examples of vegetation afforded by the temperate regions of the earth, its nave and transept are beyond the reach of the topmost spray of the loftiest giants of tropic forests; and we see there, with prophetic eye, the Banian and the Palms stretching their growth to their extremest magnitude without a check being required.

There is no need for us to offer suggestions as to the details of the arrangement of such a garden, for we know that able heads and refined tastes are already at work upon the design; yet, if we were inclined, we have before us letters showing that the gardening mind of England is busy upon the theme, and, as an example, we give the following from a thoroughly practical man:

“Of course there are many men capable of undertaking and completing such a work with taste and judgment; still, as you have given a general invitation, I hope gardeners will make known their ideas upon the subject, and, perhaps, from the mass, some useful hints may be gleaned. I should say that, to harmonise with the geometrical proportions of the building, it must be laid out geometrically; if the landscape or picturesque be adopted, it will interfere with the harmony that ought to exist between the two, *i.e.*, the building and the garden. I have other reasons for suggesting the geometrical, in an economical point of view. In order to make the thing answer the purpose, it must be *warmed*, not *heated*. Now I have an idea that statuary, placed in the open spaces where the walks intersect each other, as they do at regular intervals in a geometrical design, would be an additional ornament, and at the same time might be placed on *hollow* pedestals of open work, within which might be concealed coils of piping. The *edgings* to the clumps, or beds, I would form of piping, rendered ornamental by being cast fluted instead of plain. No fear of their scorching the foliage of the plants need be entertained, as there would never be occasion to heat them to that degree, but merely sufficient to keep out frost, and rendering the air sufficiently mild for *groves of Oranges, groves of Camellias, Magnolias, Rhododendrons, Myrtles, &c., &c.*, almost without end. As to the boiler-house for heating these pipes, I should think the present engine-houses might answer. Again, if fountains and reservoirs are judiciously introduced, what a splendid effect they will have, from the various avenues which a geometrical plan will furnish, especially if raised upon a

series of platforms or terraces from which a view of the whole garden might be obtained; and the reservoirs, if capacious, would answer as *aquariums on a magnificent scale*, as well as furnish the means of irrigating the clumps, sprinkling the paths, &c., for which purpose small pipes should be laid beneath the surface. Mr. Beaton's concrete walks would be the most likely to bear the enormous traffic they would be subject to; and grass, I think, would only be admissible upon the fountain terraces.”

Before concluding, we must express our most sincere hope never to see any horse or equipage within the structure; for the noise unavoidably their attendants, not only would be destructive of all quiet enjoyment, so desirable to be secured, but the dust occasioned would be fatally injurious to the plants. We would rather have a space left vacant for flower shows and winter cricketing!

GARDENING GOSSIP.

NATIONAL FLORICULTURAL SOCIETY.—June 26th, J. Fairbairn, Esq., in the chair. Eight new members were elected, and two more nominated to be elected at the next election. There was a good attendance, and a great number of seedlings exhibited.

Of *first class certificates*, one was awarded to Mr. Foster, of Clewer Manor, near Windsor, for his PELARGONIUM, *Optima*. Upper petals dark, edged with fiery crimson; lower petal dark rose, slightly blotched with a still darker colour; a first-rate variety, with trusses large and habit good. Another first-class certificate was awarded to Mr. Charles Turner, of Slough, for a stand of his seedling PINK, named *Optima*. The flowers are of the largest size; petals well-rounded, and smooth at the edges, laying broad and even; the white very clear. The fault we find with it is, that the dark colour of the edges and centre is rather muddy. The centre is well filled up, and the general form is good.

Certificates were awarded to Mr. Foster for PELARGONIUMS, *Ariadne, Enchantress, and Rubens*. *Ariadne* has dark upper petals, light rose edge; lower petals light rose, with a clear white eye. *Enchantress* has also dark upper petals, edged with rose; lower petals very light, streaked with pink, with a good white eye. *Rubens* is a good useful flower, much resembling *Optima*, but with smaller flowers; the form is, perhaps, a shade better, and the stain on the lower petals more dense. Of the four that obtained rewards, we judge *Optima* and *Rubens* to be the best by many degrees.

In FANCY PELARGONIUMS, Mr. Ambrose had about a dozen varieties, only one of which the censors thought worthy of distinction. It was named *Richard Cobden*. It resembled *Statiska* considerably, with more light colour on the petals, scarcely distinct from many others, yet it is a desirable variety. Mr. Lochner, of Paddington, had a seedling named *Lady Emma*, very distinct in colour. It was of a beautiful rosy lilac; flower large, and produced numerous. It received a recommendation.

Mr. G. Rogers, of Uttroter, sent a splendid dark self PANSEY, named *Kossuth*. This is an advance in the right way; size above medium; the form first-rate; substance good; eye clear yellow, surrounded with blue rays, upon the richest dark ground. It obtained a certificate.

As a contrast to this rich, dark flower, Mr. Turner sent his pansy *Swandown*, a well-formed flower, of good substance, with a dark centre, and clear yellow eye; size medium. This, also, deservedly had a certificate awarded.

Mr. Hunt's *Pandora* pansy was shown by him in quantity, and the censors remarked that it fully kept up its excellent character.

Mr. Smith, of Hornsey, sent a VERBENA, *Orlando*, a good blue lilac, large trusses, and medium-sized flowers. This is an improvement upon *André*, and obtained a certificate.

Mr. Turner's PELARGONIUM, *Attraction*, received recommendation on account of the brightness of its colours. It will be useful as a market variety, or as an ornament to the greenhouse. Amongst those that did not obtain rewards of

merit, we were pleased with Mr. Hunt's PANSEY, *Rotunda*, and Mr. Turner's *Black Diamond*, both good, but rather deficient in size.

Messrs. Henderson, of Pine-apple-place, sent a new, clear white, large-flowered GLOXINIA, named *Alba grandiflora*; an example of the noble-flowered *Gloxinia grandis*; a plant of a NEW ANNUAL, named *Eschotzia alba*, neat and useful, and some other plants. Mr. E. G. Henderson sent again, in a better condition, his new bedding, shrubby, bright yellow CALCEOLARIA, named *Wellington Hero*. The censors were Messrs. Fairbairn, Catleugh, Ambrose, Robinson, Neville, Keynes, Newhall, Norman, Lidgard, Ivery, Lochner, Turner, and Parsons.

The *Victoria regia*, at Messrs. Weeks and Co.'s Nursery, in the King's-road, is now fairly growing and flowering in the open air, for the temporary covering which was used at night has been removed these three weeks.

The plant looks extremely healthy, is interesting from its peculiar situation, and is growing and flowering beautifully; there are 12 leaves on the plant, which, with the petioles, are 11 feet in length, and completely fill the pond, which is 22 feet in diameter.

Messrs. Knight and Perry's Exotic Nursery, King's-road, is attractive just now, for they have an *aquarium* well stocked with several beautiful water-lilies, and among them *Victoria regia*; in fact, the great tank is richly furnished with lilies of various hues, in full bloom.

Turner's Nursery, at Slough, is in fine order; *pinks* and *geraniums*, abundant and fine; *carnations* and *picotees*, rapidly approaching perfection; *pansies*, though past their time, still brightening the scene; and *dahlias*, as strong as young oaks, form a perfect forest in embryo.

The recommendation of Mr. Paxton, as to the future use of *The Crystal Palace*, is not new:

Mr. Glenny stated before the building was completed, that the conversion to a winter garden was the only thing that could be entertained, and that the poorest man in the country would hold up his hand for it, if it were to be open, as it undoubtedly ought to be, to all classes, with no restriction but cleanliness and order. We are certain that a building which is the pride of the whole world, will never be demolished with the consent of the English people. Mr. Paxton estimates the expense of keeping it up at £12,000 per annum, a sum which, considering it will go in labour and be expended among a useful class, ought not to weigh a moment against the important, the all-important object of finding rational enjoyment for the million. In short, if Saturdays were made shilling days, and the profits, after paying expenses, were to be devoted to other means of providing amusement and instruction for the million, there would be no small balance arising from it; gigantic flower-shows, and various other exhibitions requiring room, might be held with advantage.

The *Rose Exhibition* at the Botanic Society, in the Regent's Park, has, as we predicted, proved a complete failure; there is hardly a single variety which is, in size or colour, a fair representation of its kind.

The *Oxford Horticultural Exhibition* being held at the same time as the commemoration, was attended by all the fashionables within a wide circle, and it was remarkable for a splendid show of *fuchsias*, which were never grown better, and of *roses*, which were exhibited in great style. The cottagers tent gave splendid proof of the growing intelligence of a class in whose welfare everybody must take great interest. Oxford encourages the cottager as growing those subjects which are useful and profitable, and fritters away no prizes for trumpery flowers and useless fruits.

Two incidents occurred worth recording as lessons:—A young exhibitor, prompted by one of those mischief-making people who delight in "setting people by the ears," complained, under rule eight, that the pansies were wrongly judged, paid five shillings to appeal against the judgment, and the judges and committee were re-summoned to the tent four hours after the judgment. He was heard, he insisted that the stand above him was disqualified, because there were two flowers with split petals. The judges protested against any change, on the ground of the alterations which occur in four hours of scorching winds and in broiling hot weather. One of the judges added—"Every stand was disqualified, but as it would have been mortifying to all, they are judged upon their general merits, and placed accordingly; and as the young gentleman has courted this inquiry, he must take the consequences; as all were disqualified, we passed over in that young gentleman's stand *two flowers of a sort*." These were pointed out to the satisfaction of the committee, whereupon, one of the members moved, that as the fact of there being only twenty-three varieties was brought before them, and their prize was only for twenty-four, the complainant be deprived of his prize, and forfeit his five shillings, for bringing forward a frivolous and vexatious complaint. After some discussion, however, it was considered the forfeiture of the five shillings would be punishment enough, and he was let off with that and a caution.

Another instance, arising out of the same injudicious rule, occurred immediately after. Five shillings and an appeal against the judgment were sent up by one of the officers of the Society. The cut roses having been in the tent four hours and a half, on going to the tent it was seen that the first stand which was nearest the entrance had withered most ruinously, and the second and third had suffered in proportion. The judges protested against the slightest change; when they awarded the prizes every stand was very carefully placed according to their merits, and it was absurd to re-examine cut roses after four hours-and-a-half exposure. In this case the committee fell in with the views of the judges; but certainly the first, and by far the best, stand had become like so many rags, even the green leaves had flagged. All we have to say upon the rose affair is, that any cultivator ought to have known better than at four o'clock to disturb a judgment given on cut roses at eleven or twelve, and that too in melting weather, on single blooms, exposed all over. The first stand was found, in addition to other evils, to have suffered for want of water in one of the tubes. These two incidents will do much good to the Oxford Society, for, if such complaints were encouraged, no rightly-constituted judge, with a reputation to sustain, would ever condescend to act for it. Two seedling pinks and two ranunculuses were commended, but there being only one bloom of each, we can only say they are well worth growing. The Oxford Horticultural Society is generally well-managed, and on enquiry, as to how the rule encouraging appeals against the judgments came to be adopted, we were informed that previous to the rule which enacted that five shillings were to be deposited with the complaints, such complaints were numerous, but since it was adopted, the present was the first that had been lodged. The Metropolitan Society's rule was better—"Any complaint, by word or deed, against the decision of the censors shall be considered a resignation, and the name be struck out accordingly." E. Y.

THE FRUIT-GARDEN.

SUMMER FRUIT DRESSING.—(Continued from page 226.)

THE PLUM.—A little more remains to be said on this useful fruit. It is much to be feared that the crop is very scanty indeed in most parts this year, and the greengages, &c. will be much missed, forming as they do such a handsome and valuable preserve. And setting aside the delicious flavour of some of our best plums, when well ripened, in the dessert, who but admires the delightful aroma the plum produces, reminding one of the enchanting and fabled perfumes of the East. Now, the failure of a fruit crop of any kind is, generally, the signal for the production of a super-

abundance of wood, and the trees are but too apt to require double attention at the very period when they promise the least return. However, to be daunted is not the way to progress. Hope beckons us on, pointing to the many triumphs that have been achieved in her name.

Trained plums do not produce their young wood in so continuous a way as the pear, for the most part they make a fitful growth during the month of June, and thenceforward seem almost stationary. Young trees indeed, will continue producing much wood up to the middle of July, when they even speedily attain the position of the older ones. Trained plums generally produce some coarse breast-shoots at those points of the brambles where, from training circumstances, the branch is made to assume an angle or bond. Such shoots are mostly of the class technically termed "robbers," and, as we have before observed, should be treated as such betimes, stripping all such away, or finishing off their points if eligibly situated for the production of useful succession wood.

Beyond such points, nevertheless, healthy trees will produce occasionally such robber-shoots; the main stems, therefore, must be traced through, and this practice carried to the very extremity of the branches. Next to these there will generally arise an order of spray, tolerably eligible for future bearing purposes, but by far too much crowded, such, therefore, may be pinched back a little while after the "robbers" are removed, to within about three inches of the base, in the hopes of inducing them to form natural spurs around their base, which not unfrequently becomes a nucleus of spurs. If, however, such does not take place, all such should be cut clear away at the next winters' pruning. After these things are carried out, the trees will present an equal and moderated appearance, and if care has been taken to thin out or "stop" duly, light will be equally admitted to all parts of the tree. One thing may here be observed, if the trees are old and exhausted, much of the *strongest* young wood must be reserved, especially if towards the extremities of the branches, but if the tree is growing wild it becomes expedient to remove or shorten the *coarser* shoots, in order to tame the tree.

All young plums in course of training on espalier rails, walls, &c., must have leading shoots laid in with care and accuracy, according to the principles of training chalked out. Another point—if the trees are infested with aphides still, let not a moment be lost in cleansing them; the injury they are capable of inflicting at a late period is greater than even that at an earlier; they now devour the highly-prepared aliment of both the present and the future crop, rendering the present unsatisfactory in flower, and laying the foundation of a lean development of blossoms in the ensuing spring.

CHERRIES.—After dealing somewhat largely with the plum, there is no occasion to run the risk of being prolix with the cherry; the treatment being nearly identical, at least as to principle. Here, again, surplus shoots may be pinched back, for we would rub scarcely any away with the cherry, on account of their very pointed tendency to form a nucleus of natural blossom-spurs around the base of every pinched-back shoot. The cherry, moreover, has not such a tendency to produce supernumerary shoots, especially the larger-habited kinds. The Morello class, indeed, as young and healthy trees, produces young twigs in abundance, but these are capable of being laid in very close as compared with most other fruits. Let, therefore, all shoots that are considered unnecessary be shortened back to about four or five inches, thus leaving three or four healthy leaves at the lower end of each shoot. The cherry not being classed with such tender fruits as

the peach, does not by any means require, nor enjoy, that intensity of solar light and heat; a moderate amount of shade is, therefore, not only permissible but requisite, especially in hot periods. Here, again, let all aphides be at once exterminated; we need hardly repeat the arguments applied to the plum, or remark on the efficiency of tobacco-water to accomplish this.

THE DOUBLE-BEARING RASPBERRY.—If the useless suckers have not been cleared away before, let it be done immediately. A selection of shoots may be now carefully made; for those which are to produce the autumnal crop may be readily distinguished; indeed, they will be near blossoming. The shoots must be kept thin, not above half so thick as the other raspberries; and they should be carefully trained to stakes or lines immediately. As soon as this is done, it is well to apply a coating of mulch, and water should be frequently administered: this is very important. Let, therefore, every useless sucker be drawn away, and see that no other crop shades them. They will never prove satisfactory unless they enjoy a full exposure to the southern sky.

THE FASTOLFF RASPBERRY not unusually produces late blooming shoots of the habit of the double-bearing; when such is the case they should receive a separate stake about this period, leaving the stake outwards.

THE ALPINE STRAWBERRIES.—Let us again remind our readers of the necessity of keeping the waterpot in use in dry weather; and of stripping away all runners not wanted for the future crops. Early blossoms, too, which had escaped notice, may be cut away, and every means taken by high culture and free circulation of air, with full exposure to sunshine, to force a good show of late bloom.

As the *Eltons* will be in full bearing all through August there will be no occasion for these to come in until September.

GOOSEBERRIES.—Let all suckers be cleared away, and means taken to retard some for late purposes. About this we must offer advice of a special character shortly.

CURRANTS (*Red and White*).—If the watery spray and breast-wood has not been cut back, let it be done forthwith, leaving a nice degree of shading for the fruit. The first stage of retardation should take place with these as with the gooseberry, which, in our practice, consists in applying some mats in a loose way for a week or two, just when about to turn colour. Plenty of advice, in detail, will be found in back numbers.

CURRANTS (*Black*).—The fruit, of course, all gathered; if time permits, let them have an occasional drenching with the soap-suds of the laundry, even sousing their leaves well in the liquor. This will drive or extirpate the aphides, and give the currants a very superior chance next spring.

ROOT-PRUNING.—It may seem strange to introduce this portion of fruit-culture at this period, but we still adhere to the opinion—albeit not based on much experience at this season—that it would be wise to root-prune, in *degree*, many unmanageable subjects, providing they have little or no fruit. We would not, however, be by any means severe in the operation just at present; it will suffice merely to detach a few of the extreme points of the rambling fibres. If the trench or excavation can be conveniently left out, so much the better; if not, it may be filled again; and, in extreme cases, another and rather more severe operation of the kind performed in the last week of October, providing it is deemed necessary. The effect of a trifling check of the kind now will be to cause a much greater solidification of the wood than heretofore: in other words, better ripened wood. This, however, will concern more immediately the wood of the *present year*; but, in order to operate effectually on the *whole system* of a gross tree,

in a permanent way, a more severe operation is requisite than can, with prudence, be advised at this time.

R. ERRINGTON.

THE FLOWER-GARDEN.

Roses.—Of all the roses which I left unpruned last winter, and which turned out so well, I think *Barron Prevost*, *Mrs. Elliot*, the *Duchess of Sutherland*, and *Fulgore* are the best. No one could make out any difference in most of the flowers of *Fulgore*, before they were quite expanded, from those of the old Cabbage-rose, and they were fully as sweet. It is an old variety of the new breed of hybrid perpetuals; the habit of it is very bad indeed, and it does worse on the dog-rose than on its own roots. It always makes one or two good shoots at the expense of all the rest; and sometimes, when you prune it close, it either dies outright, or gets so irregular in the head that no one can bear to see it. Like the *Gloire de Rosamene* it does best on its own roots; and, with all its faults of habit, no one who has ever admired the old cabbage-rose—the best of them all—should be without it. In October, and as long as the frost will allow it, you may cut abundance of roses as good and as sweet from *Fulgore* as any one can get in June. It is also the only rose I know of that will grow well for more than a few years on the Ayrshire roses, such as *Ruga*. I have had it now eight years on three climbers of the Ayrshire breed, and doing as well as I could desire; and I am strongly of opinion that it should not be worked on the dog-rose at all; and I am also of opinion, that having had the same attention as to summer-pruning as the climbers on which it is budded has had some influence on it, and caused it to do better than if it had been treated in the usual way of dwarf roses. At any rate, one thing is quite certain, which is, that this, the sweetest and the latest-flowering of our perpetual bloomers, will bud and do well on a class of popular climbing roses, on which no other rose will live more than a few years. *Barron Prevost* is certainly the most splendid rose, and the largest we have of all the perpetuals; under the plan of not pruning it in winter, the size of the flowers, with me, was immense. *Comte de Montalivet* has a larger and wider face than the *Barron*, but then it is only a very thin rose, semi-double as it is termed, and is best to be looked at from a little distance; it will not bear a close inspection. Nevertheless, from its enormous size, and having a tint which is rare in roses, it should be grown in quantities, as we do the *Gloire de Rosamene*. It is the only rose I know which hides its only fault, that is, its want of doubleness: instead of opening a full face like *Gloire de Rosamene*, and showing the “evil eye,” the petals actually fold inwards towards the eye, and hide it completely; and you might suppose, at a little distance from it, that you saw the largest and the most double rose in England, when, if this *Comte* opened back like other roses, it would look as much like a half-double hollyhock as anything else I can think of. *Mrs. Elliot* should certainly never be close pruned. It made shoots more than four feet long with me last year, the very top buds of which produced the finest sample of the variety I ever saw. This, and *William Jesse*, looked as if they were varnished with that rich metallic lustre which they alone, of all the roses, exhibit in the most perfect degree. *La Reine* never does well on our light soil; and on the no-pruning system it was worse than before. *Prince Albert*, with *Earl Talbot*, and two or three other fine roses which require a very favourable season to open them finely with us here, did not answer better by not being pruned. Therefore, I am led to this conclusion, with respect to the experiment—as far as it has gone—that it does not help natural defects in a rose, unless, indeed, it may turn out this autumn that the shy

openers may unfold themselves more freely under the next stage of the experiment, which I last week promised to allude to; but before I do so, and whilst I think of it, I must tell how I managed to make a hedge of perpetual roses without laying down a regular foundation for one.

Ever since our hedges of the *Gloire de Rosamene* began to draw the attention of visitors to that style of exhibiting them in pleasure-grounds, my worthy employers were desirous that others, including the *Moss* and old *Cabbage* roses, should be tried in hedges also; and I am not very sure that this earnest request was not at the bottom of my experiment of not pruning in winter: at all events, it has ended in part of the trial. Four years since I planted one or two specimens of all our best roses in a row, from the door of my cottage down in front of a peach-border, and only eighteen inches from the side of the walk. They were all budded on six-inch stocks of the *Boursault*, the best stock for our light land, were it not the bother it gives one to keep down suckers. These were intended to “kill two birds with one stone:” first, for cut flowers; and, when they got too large and encroached on the walk, to be potted for forcing, or to be sent to the “rosary,” full-grown, and still in the prime of youth. Well, as soon as the experiment of letting a great number of roses go unpruned was determined on, this row in front of my house was fixed on to make a hedge of at once, and such a hedge I never saw before. Without any romance, it was literally hung with roses as you would see onions tied on ropes for a country fair. Last winter the row was turned into a hedge in two days; a row of stakes were set a yard or so apart down the middle of the row, and then straight hazel rods put in horizontally and tied to the upright stakes; the unpruned shoots of the roses were trained at full length, right and left, against the rods, and the whole was kept as low as we could, so as not to shade the peach border too much. It is only a little better than a yard high, and shall be kept to that height. Now to do this properly, will explain what I mean to do with all the unpruned roses for the rest of the season. We have trained raspberry canes in various ways time out of mind, some upright, some slanting to one side, and others arched over between stool and stool; and as soon as the crop was over, in my younger days, the canes which produced it were cut out, no matter how green their leaves might be at the time; this was told me to be for letting in more light and air to the canes which were to bear next year, and that cutting away the bearing canes as above would give all the benefit of the roots to those for the next year’s bearing. But whether all this was right or wrong, or partly both ways, is not for me to say. Mr. Errington must know all about it, and can explain it better than is necessary for me to try on this occasion. But I well recollect that under that system, for years and years, I used to see the best crops of raspberries; and, therefore, I intend to try the same plan with these roses, with only a little variation. Indeed, I am doing so just now, and I think it will answer capitally. The raspberry canes were allowed to ripen the fruit, and no more; the rose shoots will be allowed only time to ripen their flowers, and not even that in some cases; for I see that as soon as the top rose on a long shoot is full blown, and so will not allow the shoot to extend any more in that direction, the eyes on the bare part of this shoot begin to grow away in earnest, and exhibit that impatience at restraint which caused people to give up the plan of training down roses in the rose beds. Now there is a philosophical knot on this shoot, just between the flower-bearing top part and that portion of it just breaking into new shoots, which, if I had the necessary time to discuss, I should like very much to cut, if only half-way through, as they do for layering rose shoots;

as it is, I must be content with saying, that throughout the season, that is, through July, August, and September, the flowering shoots will be cut down from time to time, as the first roses on them are past their best, without waiting for all the buds on every little side shoot to open. Some early-flowering shoots that have been so cut at the very end of June, are now in bloom from the next succession of shoots from below; and if all the eyes, down to the very bottom of the last year's wood, do not break out into flowering branches at this first succession, the shoots will be cut down in August still lower, and then be in the same shape as they would have been at a winter pruning; that is, in effect, but not so in reality, as the shoots on any given plant are not to be all cut down at one time, but in succession. If this system does not injure the plants in the long run, and I do not think it will if the plants are kept well fed, the advantages I expect from it are flowers a week or ten days earlier in May, and four times as many flowers, at least, from the same plants in the course of one season. I think I can see conclusively, through this experiment, the utter folly and the unscientific bearing of the common practice of pruning roses in the spring in our climate, at least; and not only roses, but all other bushes or trees which cast their leaves in the autumn. As soon as the leaves are down is the proper time to prune, except in *special cases*; and such cases do occur every season, and on both sides of what may be called the meridian time in pruning. On this side of the line, we all know that weak growing trees, or other plants, can be improved both in health and vigour by being pruned six weeks' before the fall of the leaf, as had been long since proved on scientific grounds by Mr. Knight, and Mr. Williams, of Pitmaston, in the case of some fruit trees; and on the other side of the line, we are equally certain that it is right to put off the pruning season of some fruit and flowering plants, roses among the rest, till late in the spring; still, such exceptional cases do not weaken the general rule, or the principle of the practice.

NEW TREES.—It may be interesting to the lovers of fine evergreen trees to hear that His Royal Highness Prince Albert planted the largest saleable plant in England, of the Chilian Arbor-vitæ (*Libocedrus Chilensis*), in the gardens here, to commemorate his first visit to Shrubland Park; that this noble evergreen tree attains the height of from 60 to 100 feet on the Andes of Chili; and that, although it has been known to botanists for some time, from the accounts of travellers and dried specimens, and also with *Libocedrus tetragona*, as the celebrated *Alerce* of Chili, so much valued for the excellence of its timber, it was only last season that the first seeds of it were procured in quantity by Mr. Low, nurseryman, at Clapton, near London—the only importer of it—and that through the exertions of a once Suffolk gardener, Mr. Thomas Bridges, to whose memory Sir W. Hooker dedicated the genus *Bridgesia*. It thus turns out, singularly enough, that the first plant from these seeds should be planted in Mr. Bridges' native county; and that, too, by the most distinguished patron of science in this or in any other country. Mr. Bridges advises that this splendid tree should be planted over a dry bottom, and I can vouch for that condition having been fulfilled here to the letter. He also advises that very young plants of it should be slightly protected for the first winter or two, and, of course, we shall attend to his instructions. But Dr. Lindley and Sir W. Hooker agree in considering it as hardy as the *Araucaria imbricata* from the same country. Dr. Lindley, writing on this and the other Chilian Spruce, *Libocedrus tetragona*, says of them:—"No doubt they are among the finest Conifers in the world."

After planting the Chilian Libocedar under the royal standard, which waved over our heads from the summit

of the Albert Tower, a recent pile erected from the designs of Mr. Barry, His Royal Highness opened a conversation on the recent divisions into which the *Conifers* have been arranged by Endlicher and other botanists, and evinced such a thorough knowledge of the different sections as surprised even an old gardener, to say nothing of the workman-like manner in which he handled the silver-mounted spade in the act of planting this fine tree, a biography of which had been prepared for his perusal. It turned out that His Royal Highness had little need of such aid respecting any of the recently-introduced trees to this country. A gentleman present—having expressed a wish that His Royal Highness might live to see the tree he had planted rear its head as high as the top of the flag-staff close by, he immediately instanced, in reply, the rapid growth of several species of *Cypresses*, and, among the rest, an avenue of Cypress near the city of Mexico, where some of the trees have attained the enormous height of nearly 300 feet. Altogether His Royal Highness's remarks, conversation, and questions about our craft, have put some of us here to the blush; and I only wish that I could say or write in the same strain, so as to induce our rising race of gardeners to study, more than they usually do, the geography of the plants they cultivate, and also their botanical arrangement, according to the best authors. Depend upon it, a young gardener has only put his foot on the first step of the ladder when he has received his gold medal for a collection of well-grown specimens.

D. BEATON.

GREENHOUSE AND WINDOW GARDENING.

ALTERING PITS AND HOUSES.—When in other sciences a new fact or principle is clearly demonstrated, the mind is often satisfied with contemplating it, and a sort of sluggish repose is apt to creep over it. Different, to a great extent, is it in gardening; and that difference seen in all, is most strikingly apparent in those who are just commencing their experimental acquaintance with it. Delightful it is to contemplate a beautiful flower in any case; but the fact that we have reared and tended that lovely plant with our own hands, imparts a delight that the mere spectator admirer never can share. One of the charms of our art is, that the incitements to activity and progression are identical with motives to realize fresh and hitherto untasted delights. The man who cultivates, with zest, his potatoes and cabbages, will, every season, be adding a fresh vegetable to his lists. The rigid amateur, who at first can only see beauty in the perfected form of a few florists' flowers, will, almost imperceptibly to himself, be ever and anon taking fresh protégées under his care. The mechanic, who tries his cucumbers out-of-doors, will first obtain calico and paper coverings, then a hand-light or small box, and then even the two-light box probably will not be the last of his achievements. To supply their windows, to decorate their flower-garden, our friends have provided themselves with pots, lesser and larger; but will they be satisfied with these? No; the desire to grow things better and larger, and to have them to look at as specimens in pots, instead of having a more limited collection in the flower-borders, oppresses them like a dream of fairy-land, and they resolve that such visions shall be realities, by constructing greenhouses afresh, or turning the pits they already possess, with a little alteration, into such desirable receptacles.

Hence, notwithstanding all that has been said respecting the formation of pits, and the heating and building of houses, many queries from some of our friends continue to be presented; and, as likely to be generally interesting, one or two will be selected as the

matter for this week's article:—*W.* presents us with a pit, 5 feet deep in front, and 8 feet at back,—it being 18 inches above the ground level in front, and 3 feet at back,—and, we suppose, 12 feet wide, though it is not mentioned, and 21 feet in length. This pit is heated by a flue, which traverses the front and both ends, and he proposes to alter it so as to make it “a good fuchsia house;” gives a section, with which we have no fault to find, only that it does not seem to be drawn on the same scale as the section of the pit, and neither are figures of dimensions given, both great requisites when advice is asked, but the prominent features of which appear to be—the raising of the house, or pit, so as to have upright glass in front, say 18 inches or 2 feet in height; the placing a stage or floor a few inches below the level of this front glass; the bringing of the flue back along the middle of the pit, in what would thus be an enclosed chamber, and returning it again by the back wall, giving thus three lengths of flue instead of one; and widening the house by building another wall, two or three feet distant from the back wall of the pit, in order that a path may thus be obtained, that will afford walking and working room inside,—the door to the pathway being through this back new wall.

Opinion is asked as to the angle of elevation to suit fuschias? the propriety of so managing the flue? the depth from the glass at which the flooring should be to suit fuschias? the covering for the additional roof over the path? whether pots should be plunged in sand on the floor, or set on boards, &c.? Conditional answers to which will be found in our, perhaps, too hasty reply.

1st. *Flues.*—So far as fuschias are concerned and greenhouse plants in general, we see no necessity for building two new lengths, one in the middle and the other at the back of the present pit; as a good working flue along the front and both ends, though these ends as proposed should be almost wholly of glass, will be amply sufficient. Though fuschias will bear *forcing*, nay, even a certain amount of bottom-heat when starting, the plants are never so fine, and robust, and bushy, as when grown in a comparatively cool, airy atmosphere, and this flue, as it at present exists, if in good condition, we would consider quite sufficient for getting them into bloom in June and July, and earlier if wanted; but then flowering plants must be obtained at the sacrifice of dispensing with close, sturdy growth.

2nd. *Inclination of the roof.*—This for fuschias will answer admirably, and for greenhouse plants in general, intended to bloom and ripen their wood in summer. For early blooming and early flowering it would be better to raise the glass at the back 18 inches higher, which would thus give you the command of more rays of the sun in the early months of the year.

3rd. *Covering over the back path.*—Wood, asphalt, &c., may be used; but where you did not mind the raising of the back wall, we would raise it so high as to enable you to put an additional short glass sash in the same slope as the rest of the roof. If this was objectionable, we would build the new wall 18 inches or two feet lower than the height of the proposed roof over the pit, and from that point to the wall-plate over the back wall we would have a sloping narrow roof of glass. In this case a longitudinal rafter must be provided, to which both the long front rafters and the short back ones should be fixed. Stout, neat, oak or iron supports, from the back wall of the pit would keep the longitudinal rafter in its place, and be a capital place for nice creepers; glass over the place, in whatever way applied, will be little more expense in the long run than any opaque material, while you will have all the advantage of the light conferred, and thus may use the new back wall for holding small plants on narrow shelves, for growing creepers and twiners, for training camellias or

oranges, or by building it rough and rustic for growing the hardier ferns, mosses and lichens.

4th. *Position of the floor, distance from glass, &c.*—These must be regulated by your desires. Some are satisfied with a fuchsia, or any other greenhouse plant, when it is from three to five feet in height; others grumble if they do not get them giants, ranging from eight feet to as much more. If the latter is your wish, you will want little or *no* flooring. If you intend having a fixed floor, calculate upon having one foot more from the floor to the glass, than the height you would wish your plant to arrive at. Where the plant is small, it may be elevated upon a pot, or a series of pots. Strong slate is the best material for flooring, where expense is no object, as, if well laid down, the water lost in watering in summer is retained to produce a moist atmosphere. In such a case as that before us, where a raised floor was deemed necessary, we should employ earth or rubbish of any kind, covered first with cinders and salt, and then with gravel and sand. The sand, &c., would absorb the moisture and give it out again. On this account, a wood platform, suggested by our correspondent, is the worst in summer, because the moisture escapes from the pots so freely; but it is very useful for many plants in winter, just because the moisture drains off so readily, and there is, therefore, little danger of damping. There is no difficulty in fixing the bottom of a stage, or the flooring of a house, when plants similar in size are to be grown there; but the difficulty is to decide when one house is to contain plants in *all* stages of growth, from so many inches to so many feet. If our enquirer (*W.*) had not finished the walls of his pit, or house, I would advise him to do as we ourselves have done, or rather improve upon it. All round a pit, at a certain distance from the glass, so as to be on the same level, back and front, a brick is left out one inch past the perpendicular, and the following layers are put above it in the usual way. These inch projections serve admirably for placing strong boards across as a flooring for the reception of dwarf plants, and when they become too tall for their place out they come, and the boards too, and then they are replaced as far from the glass as you please. Where there is limited space, there may be three or four such means of moveable flooring instead of one, and thus full indulgence given, in the same pit, to plants a few inches in height, as well as those of several feet. By such means, the same pit that has had French beans in winter, and strawberries in spring, has had fuschias, begonias, &c., of good size in summer and autumn. If, however, a fixed stage or flooring on a level is desirable, we recommend slate, for neatness; and earth, &c., covered with sand, for utility and economy. In this, pits of small size, say a foot square, may be enclosed for the growth of the best creepers.

5th. *Width of floor, or stage platform for the plants, conveniences of watering them, &c.*—*W.* shows his intended floor or stage running from the back wall to the front wall of his pit, and enclosing his contemplated series of flues. There is, therefore, no pathway in front, no opportunity of getting at the plants there except by the front glass, and this would run counter to his desires to have the work performed within. Whether his pit be nine feet or twelve feet in width, he cannot attend to his plants from the path behind, and what is more he will never be able to see them to advantage if his house faces the south, as the best side will always be turned from him. To keep them in good condition in such circumstances, he will often have to *sprawl* among them all-fours. And what is the remedy? Widen or not widen the house as you think proper; but if it is twelve feet *now*, it will make no bad place for fuschias, or other things either; elevate it undoubtedly. Retain the flues if you like, but save a place, or sink a part at one end of the house, or have room for a path by the side of it.

Have the door at the back if you wish it; but let the path from it lead not along the back, but to the centre of the house, or have the door in the end facing the centre, and thence take a path lengthwise along the middle of the house, and have a platform for your plants on each side, on which you can easily reach your plants for everything desirable. The next best, would be to keep so far to your proposed arrangements; but instead of taking your platform right on to the front wall, to have a narrow trellis of shelf over your flue there, six inches below the level of the front glass, and inside of your flue a pathway, so that you may examine your plants in front.

I have furnished matter for consideration; I should hesitate to do more without more definite information. Another friend sends a section of a span-roofed house, glass all round, with the exception of the low side and end walls. It seems narrow, not wider apparently than your pit, as the two side shelves are each the same width as the path along the middle; and a most useful place it will be both for growing and showing off to the best advantage. As much more width as would have furnished room for a flat stage or pit in the centre, with walk round it for general purposes, would have rendered it complete. The proprietors of such houses will soon send us lean-to gentlemen to the right about. *William K.* inquires respecting it, whether the stage should be level, or in the gradation of two steps, the lowest next the path, and, therefore, farthest from the glass. Level, in such circumstances, undoubtedly; use topsy-turned pots to make *starers* if you like; but, instead of having that level equal with or rather above the base of the front glass, we would place it six inches below it, and then, though the top of your plants would receive all necessary light, the pots would not be so much scorched in bright sunshine. R. FISH.

HOTHOUSE DEPARTMENT.

EXOTIC STOVE PLANTS.

GENERAL HINTS.—This department of the garden will now be quite gay with bloom. The numerous branches of the *Gesnerworts* should be in the greatest beauty, *Achimenes*, *Gloxinia*, *Gesnera*, *Sinningia*, &c., showing, if well-managed, a galaxy of floral beauty, such as our fathers in gardening never dreamt of. The permanent inhabitants of the stove will, generally, be out of bloom, cut down, repotted, and placed in deep cold pits, kept close at nights to cause them to grow stout and bushy, and laying up a store of robust health to enable them, when the summer occupants are at rest and placed out of sight, to render the stove an interesting and pleasant place to visit, when all out-of-doors are wrapt in the sleep of winter.

Considerable labour, care, and foresight, is now the portion of the best cultivators of stove plants. Very different was the management even twenty years ago. The plant stove was then a receptacle for as many plants as could possibly be crammed into it, and long-legged, unsightly objects they were. Now that the management of the best old plants, and the immense number of newly introduced ones, is better understood, since the industry and skill of the growers are brought into active operation, the stove plants are cultivated with such success, as regards form, size, and bloom, as would astonish, could they see them, the cultivators of half-a-century back. And why should we not progress and attain to another advance as great by the end of this century, as we have accomplished since its commencement? We see, every year, an improvement, a decided improvement, in the plants exhibited at the various horticultural exhibitions throughout the length and breadth of the land. The visitors to these shows must observe that

advance, and go home with a determination to try to produce such plants in their own stoves. Some, indeed, seem desirous to continue in the "good old way," as they term it, and cry out against such exhibitions, because they point out, with a loud voice, that it is time to be up and doing, and actively too, in order to keep pace with the march of gardening in the culture of ornamental stove plants. These deprecators of improvements are happily few, and fast departing from amongst us (if not in body) in spirit. The grand cry with such is now, "I have no time to grow a collection of stove plants," or "I have not space to grow them." Then why attempt it? Do not grow a collection at all. Aim at a selection. Throw away, courageously, all such as are not highly ornamental. Grow twenty plants well, and not a hundred badly. This was the grand mistake of our forefathers, and it is high time we aroused ourselves to cast off the trammels of ancient practices, and enter into a new and improved mode of both cultivating and selecting objects of cultivation to render the plant stove attractive. By a judicious selection of plants, and a pit or two to grow them, the stove may be kept constantly filled with plants in bloom. Now, at this season, we have plenty of objects to flower. The tribe mentioned at the head of these remarks has, by fresh importation, and the art of hybridising, become sufficiently numerous to fill the largest stove. In winter we have the *Justicias*, the *Eranthemums*, the *Aphelandras*, the *Rogieras*, some *Salvias*, besides forced flowers, to ornament the stove. In spring we have the sweet-scented *Gardenias*, the *Euphorbias*, the *Poinsettias*; and in the early summer months there is the *Stephanotis*, the *Allamandras*, the *Ivoras*, &c. All these, as our skilful brethren are aware, require a preparation, a growth, and a rest, to render them worthy to fill during their season, in a creditable manner, the place, the honourable place, of the first rank in the scale of perfection in the stove. This preparation is a test of the skill of the cultivator. Unless done in season, and in the right manner, the attempt will be a failure; and, if not eventually successful, a disgrace. We delight to observe attempts, even if mistaken ones, they show a desire to improve and excel. "What man has done, man can do," ought to be the motto of the young beginner; and "what man has done, I can improve," ought to be the motto of the more experienced cultivator. But this improvement cannot be achieved without exertion. Every power of the mind, a constant study of the physiology of plants, the circumstances of heat and food for them must be diligently studied, the situations in which they flourish in their native clime be learnt and acted upon, and, lastly, a large stock of persevering industry, and patient application of all the means at command, should be acquired. All these are indispensably necessary to become a successful improver in the art of cultivating all plants, whether hardy greenhouse or stove. T. APPLEBY.

FLORISTS' FLOWERS.

MR. GLENNY ON FLORISTS' FLOWERS.

THE *Botanic Society's Show* was not remarkable for seedlings. *Optima* and *Purple Standard geraniums* received certificates. Mr. Turner exhibited many seedling *Pansies* in his stand, and we must see some of these again. It is dangerous to give an opinion on a single bloom. He also exhibited a light *Fuchsia*, called *Conspicua*; we must see it grown better before we pronounce upon it. The highly-improper mode of allowing seedlings to be shown in stands, places a raiser over the heads of all the most liberal buyers. Imagine the advantage of turning to a seedling-bed to make up a stand, and resorting to it for eleven blooms out of twenty-four; or rather imagine a Society offering prizes at all for

Pansies in July! We have made notes of two or three, but the majority will not be heard of again.

PINKS (Oxford).—British Queen is a fine round, full-faced, smooth-edged, well-laced purple, with five lines of good petals. We have only seen the single bloom forwarded to us. (Mr. Trenfield).—By all means grow all that can be grown of Nos. 8, 2, 3, and 4; we must see the rest again. (Mr. Smith, Whitney).—All promising, but we have no names nor numbers to identify them by. *Giddy's Jenny Lind* specimens very rough; but some of our best and smoothest varieties are very ragged the present season. Parching winds do not agree with Pinks.

CINERARIAS AND GERANIUMS (W. X. W.).—The geraniums are pretty, and, notwithstanding they come in bad condition, we believe them true. The Cinerarias, we hope, are not true; for they are good-for-nothing.

BALSAMS (X. Y. Z.).—Very noble individual blooms as large as roses. They are not new. The straw-coloured one was introduced a year or two since from abroad under the name of *Balsamina lutea*, and was very nearly single; we have them this year as double as any.

PINKS (Mr. Trenfield).—All but three are worth trying again; get somebody to grow two or three pairs of each, for Pinks have taken a start this year. Mr. Turner has thousands, and a vast number of them will shake some of our present favourites. (J. P.).—No. 2 is like *Giddy's Jenny Lind*, but not half so good; No. 1, too ragged; No. 3 may be tried.

VERBENAS (J. S. James).—No. 8 is *Exquisite*, there is no mistake, but it is not in character—have patience; *Orlando* is not out yet. Nos. 2, 3, and 4 are not worth keeping; No. 1 is pretty in colour, but a bad trusser, and we know nothing of the habit. (T. M.).—It is absolutely necessary in these days of advancement that a *Pink* should bear, at least, three good tiers of ten petals each, and a crown, to be passable at all. That the petals should be rose-edged instead of rough; and that every petal should be laced with a narrow white edging outside the lacing. Now, there is not one of T. S.'s seedlings that come near this character. We have seen pinks with five distinct tiers; and we think we noticed one of Turner's *Optima*, with five tiers and a crown.

BLOOMS OF BALSAMS (J. W.).—These are not always proper evidence of the quality of seed; poor starved growth will make the very best come nearly single; the Balsam must be grown in rich compost, be shifted until it occupies, at least, a twenty-four-sized pot; and be grown so close to the glass as to prevent any drawing-up of the plant. In all probability, J. W.'s will come more double yet; but, as those who save seed gather it from all the plants that will bear it, we have no right to expect any very good bought in the ordinary way; go among Balsam-growers, buy half-a-dozen of the best, at any price, and save seed yourself.

FORM OF THE CALCEOLARIA.

MANY objections have been made at floral meetings—that is to say, meetings of genuine florists—that Mr. Appleby's advice, as to the form of the Calceolaria, is retrograding altogether. Mr. Green was the first who wrote on the proper form of the Calceolaria, and his standard was taken from his own flowers, which were flat. *The Properties of Flowers and Plants*, by Mr. Glenny, upset this dogma altogether, by showing that the perfection of a flower was not to be measured by what we had got, but by what we should like to get; and from that time we have all been working for the desired models, instead of the realised models. "The bloom of the Calceolaria," says the work in question, "should be a perfect round, hollow ball; the calyx and orifice cannot be too small, nor the flower too large." The ques-

tion, then, among florists was this:—"Is Mr. Appleby proposed to contradict or to set Mr. Green's standard up against that which has been acted upon for years, and which, to this day, stamps as best those which approach nearest; or does THE COTTAGE GARDENER dissent from the universally-accepted model?" The general feeling among all florists appears to be in favour of the authority quoted; and, perhaps, THE COTTAGE GARDENER will best please the mass by at least quoting the original, and leaving them to adopt which they please. Whether it be right or wrong, there is nothing left indefinite; but nothing has advanced floriculture so much as definite standards of perfection; nothing damages it so much as setting up different models. This question, however, can be settled soon. "Would a perfectly globular flower look richer than a flat one, or one with a mere swelling to hide the throat?" The majority will say, Yes.

GLOBULUS.

[We publish below the characteristics of a superior calceolaria from Mr. Glenny's works, and which "Globulus" is quite wrong in thinking Mr. Appleby dissents from. When the latter says, at page 215, the flower "should be a complete circle without any indentation on the edges," he evidently only speaks of the outline, and does not dissent from the opinion that a globular form is most desirable.

For our own part, we entirely concur in the desirability of the calceolaria flower being spherical rather than flat, but we do not assent to the opinion that one having smooth-surfaced globular flowers, would be more beautiful than one of a perfect melon form—a form to which it shews a tendency.—Ed. C. G.]

"THE PROPERTIES OF THE CALCEOLARIA."

From "*Glenny's Properties of Flowers*," &c.

"1. The plant should be shrubby; the habit bushy; the wood strong; the foliage thick and dark green.

"2. The flower-stem should be short and strong; and the footstalks of the booms elastic, and branching well away from each other, to form a rich mass of flowers, without crowding.

"3. The individual flower depends entirely on the form of the purse; it should be a perfect round hollow ball; the orifice and calyx cannot be too small, nor the flower too large.

"4. The colour should be very dense; whether the marking be a spot in the middle, or stripes, or blotches, it should be well defined; the ground should be all one colour, whether white, straw, sulphur, yellow, or any other colour.

"5. The colour of a self should be brilliant, and all over of the same actual shade; dark flowers with pale edges, or clouded and indefinite colours, are bad and unfit for show.

"6. The bloom should form one handsome group of pendent flowers, commencing where the foliage leaves off; the flower-stems should not be seen between the foliage and the flowers, which latter should hang gracefully, and be close to each other; the branches of the flower-stems holding them so as to form a handsome surface."

FLORISTS' FLOWERS CULTURE.

THE FUCHSIA—(Concluded from p. 230).—*Propagation. By Cuttings.*—The best time to do this is in the early spring months; the first week in March, for instance. Previously to commencing, it will be necessary to place the plants intended to be increased by this mode in a gentle heat to cause them to push forth young shoots. When these have attained two or three leaves, slip them off, and lay them to dry for a short time; and whilst that is taking place, prepare the pots to receive

them. The size of the pots to be used for this purpose should be what are called 48s, measuring about four inches and a half in diameter. Let them either be quite new, or, if old, let them be thoroughly washed clean. Drain them effectually, and place either some moss or some rough siftings upon the drainage; then fill the pots with light, rich compost to within an inch of the top; fill the remainder with pure silver sand, give a little gentle watering to make it firm; let it stand a few minutes to dry, and then put in the cuttings, first smoothing the bottom of each with a sharp knife. Plant them round the edge of the pot, putting them so as to let the leaves point inwards. Remember, the cuttings cannot be too short. If the stems are just inserted within the sand, and the leaf or leaves are left out of it, they will strike root all the sooner. When the pot is planted with cuttings, fill up the holes the planting-stick has made with some dry, fine sand; then give a gentle watering with the finest rose watering-pot, and let them stand till the leaves and the surface of the sand has become moderately dry, then place them either in a gentle hotbed, or under hand-glasses, in heat; give them a change of air by tilting the lights of the frame upon the hotbed every morning, or by lifting off the hand-lights every morning early for an hour; shade them well from the bright sunshine during the middle of the day until roots are perceived to be formed; lose no time, as soon as that takes place, in potting them off into 2½-inch pots. If all points of shading, watering, and giving air, have been duly attended to, roots will be formed in fifteen or sixteen days from the time of putting in the cutting. After the plants are potted off, replace them where they came from for a week or ten days, keeping them pretty close, and shaded from the sun; give very moderate waterings, only just sufficient to keep them fresh and growing. When more roots begin to show themselves, give more air and less shade, till they are enabled to bear the full light of the sun; they may then be considered and treated as established plants.

Summer Culture.—The plants struck in the spring make the finest specimens for exhibition in July. No plant can be considered a fine specimen unless it be at least four feet high, with numerous side branches; and, by judicious culture, this may be accomplished easily enough the first year. We have now, at Pine-Apple-Place, a house 60 feet long nearly filled with such plants that were all cuttings this spring, and there are, no doubt, many such plants raised at the same time in other establishments. "But how is this to be done? you have every convenience, and no doubt clever men to manage them." We will try to describe how it is done, and hope to be able to show that no great skill is necessary, or much convenience required. The two grand points to succeed well in growing fuchsias for exhibition are, constant attention and room to grow them. When the young plants have filled their pots with roots, shift them immediately into 5-inch pots, in a compost of light loam and leaf-mould, in equal parts, adding a due portion of sand to keep it open; this will be rich enough for the first two shifts. Place them in a house heated to 55° by day and 50° by night; let them stand pretty close to the glass to cause a stout growth. Now is the time to determine upon the form the plants are to take when fully grown; there are two, the pyramidal and the mere bush,—we think the first the best and most elegant. To furnish side-shoots it will be necessary to nip off the tops when the plants are six inches high; side-shoots will then be produced, and these should be tied out horizontally; the uppermost shoot should be tied upright, to be stopped again when eight or nine inches have been added to its stature. By the time this has taken place a fresh shift will be necessary; the diameter of the pot this time should be seven inches. This shift should take place about the middle

of April. Replace them in the house again, as near the glass as their shoots will allow. Give them now every attention, to cause strong, quick development, by watering freely at the roots, by syringing them overhead morning and evening, especially in sunny weather, and shutting up early in the afternoon, at the time the syringing is done; this will create a most stimulating atmosphere, and the plants will show they are thankful for such care by growing fast, and producing broad, healthy foliage. Stop them again, and tie the side-shoots out in such a way as will furnish every side of the plant with horizontal branches equally distributed. If the house is a lean-to it will be necessary to turn the plant round every three or four days, to cause every side to be well proportioned and equally furnished; but if the house is in the best form, a span roof, this trouble will be avoided. Continue this training till the plants have attained the requisite height, and begin to show bloom; the supports should then be removed, and the branches will droop downwards in that elegant manner for which this tribe is so much admired. Repot twice more, first into 9-inch pots in May, and into 11-inch pots in June. In this last size they may be allowed to flower, and will then be perfect specimens of elegance and beauty. They should then be removed into the greenhouse, and have abundance of air night and day. They will adorn the greenhouse when there are few other of its proper inhabitants within, they being now set out of doors to enjoy the summer breeze. T. APPLEBY.

THE KITCHEN-GARDEN.

ROUTINE-WORK.—*Brocolis, Borecoles, Brussels sprouts, Savoy, Coleworts, &c.*, should be planted out, if not already done, in full crop. If room can be spared, plant again a few *Dwarf Beans* and *Scarlet Runners*; and, about the middle of the month, sow early varieties for coming in in Autumn. See that a good succession of *Cauliflowers* are put out; any piece of warm border, from which *Peas* or *Strauberrys* have been cleared, should be broken up as rough as possible with a strong digging fork, and be occasionally well-turned over and sweetened, in time for the principal *Spinach* sowing for winter's use. *Garlic, Shalots, and Underground Onions* should be taken up and stored. Autumn-sown *Onions* should have their tops bent down, and a few more should now be sown, for a supply of young onions in autumn.

TURNIPS.—To get a crop of quick-grown well-flavoured turnips, the soil should first be well-pulverized, and a small portion of some kind of manure drilled in with the seed, to encourage a kindly start. Wood, turf, or peat-ashes saved dry, or charred materials of any kind, are all well-known as excellent fertilizers for the turnip; and so is guano, as well as sulphur, bone-dust, and many other articles which cost money to purchase, but the former articles may, in many places, be saved or procured almost free of expense; and so may night-soil, one of the richest of all fertilizers, and which may be modified to any extent, by properly mixing it with charred or burnt earth, dust of any kind, charred wood-dust, or charred old tan, &c. It is astonishing what may be accomplished by economizing the various little articles that are often found to be wasted about almost all dwellings and pieces of land.

If dry weather continues to prevail, mulching the surface of the earth amongst the crops will be very advantageous, and liberal soakings of water should be applied to free-growing crops. JAMES BARNES.

MISCELLANEOUS INFORMATION.

MR. TAYLOR'S BOXES, SCREENS, AND BURYING BEES.

Mr. Taylor's observations in your 143rd number call for a few remarks from me, which I hope may find a place in your paper. With reference to his *bar-hives*, whether single or double, I have little to say. I can only state my conviction—a conviction which grows with my experience—that boxes uncased, or with a shell or covering of wood fitting to them almost closely, ought not to be exposed to the sun under any circumstances. If Mr. Taylor objects to the old-fashioned bar-shed, that it “*retained the sun's heat as in an oven*,” which was yet “open in front,” with how much greater reason may the same objection be raised against his double bar-hives, which have but the interspace for air of an inch all round! The bees are inconvenienced, the delicacy of the honey-comb spoiled, and the bee-owner's profit diminished, in proportion to the exposure of a hive to the sun's influence. Mr. Taylor will acknowledge this as much as I do; and does he not know how poor a remedy against these evils is even 1½-inch stuff, as a material for the boxes? My remarks on his hives (the construction and plan of which is admirable, as I have allowed) have been made with no other object than by way of *caution* to the apiarian; and I have seen no reason to alter my opinion, unless it be that I am disposed more strongly to reiterate my advice, under no circumstances to locate boxes in the open air *unprotected by a substantial roof*. Under a veranda (as the boxes are to the right of the frontispiece in “The Bee-keeper's Manual”), or beneath a thatched covering, or overhanging tree, no hives will do better than Mr. Taylor's; but let them not stand exposed, as they are seen to the left of the same frontispiece.

With respect to the winter protection of bee-hives from the sun's influence, to which allusion is made, let the public decide between the method proposed by me and that so strongly advocated by Mr. Taylor. I allow, that if my screen were loosely fixed, and badly arranged, it would want but a faint gust to blow it down; but, really, Mr. Taylor must be joking to suppose that I suggested any arrangement of this kind! However, let him who cannot fix my screens properly by all means adopt Mr. Taylor's. Only let him place them at such a respectable distance from the hives, that, should the wind mistake them for weathercocks, they may not in their gyrations strike the hives, and alarm the bees during their winter's rest. Should anybody, however, deem my method not so bad after all, I would advise the screen to be erected about a yard distant from the hives, to be constructed of stout posts, not too far apart, well fixed in the ground, to which strong lines of cord are secured; on this, by the simplest contrivance, the matting, or sail-cloth, may be fastened; and I defy the strongest wind, short of a hurricane, to knock it over. It need not stand very high, especially if the hives are well-covered and roofed over, but just sufficient to ward off the sun from the lower part of the hives throughout the short winter day, when it is low on the horizon. As to its proving a hindrance to the bees in returning home when so placed, Mr. Taylor must permit me to say the objection is puerile. Let it be fixed on a mild day early in November, when the bees are about, and they will soon accustom themselves to the slight obstruction. But let the apiarian public accept or reject the suggestion as they please; it is a matter not worth contending about.

Again, does Mr. Taylor, *alias* “An Old Bee-master” (for, apiarian reader, are they not one and the same person?), sneer at our hive-burying experiment during the past winter. Had he advanced any facts based on his own *experience* which made against it, to counterbalance the *success* of Drs. Bevan and Dunbar (not to mention other cases), and the remarkable *experience* of Dr. Lindley's “trustworthy” correspondent (alas! for the accuracy of the Old Bee-master's “investigation,” which resulted in proving fact to be “fiction”—See THE COTTAGE GARDENER, vol. v., pages 118 and 234), we should, probably, not have now to be laughed at for our simplicity. However, as it is, I am glad to think that a doubtful matter is set at rest. Mr. Taylor may ridicule as he pleases; but, fellow-victims of credulity, we may console ourselves with the thought that posterity

will do us justice—that they will laud the magnanimous sacrifice we have made of so much hope of golden sweets out of a pure love for scientific truth! No Bonner, or Bevan, or Richardson, will now, even hesitatingly, suggest that bees have been buried and disinterred, safe and sound, after a five-months' imprisonment, and so half-recommend a trial of the same. We have the satisfaction of knowing that a step of some importance has been gained in apiarian lore: we have done for ever with under-ground and leaf-burying, either with or without a ventilating apparatus; let us now see if we cannot discover some other plan of wintering bees better than that which our “*ignorance*” still adheres to as the best. Mr. Payne, in the same number which contains Mr. Taylor's critique, has stated his belief that our bee knowledge is still *in its infancy*; and though I have not yet dared to say so, I believe it also.

I esteem it fortunate that the winter of 1851 was of so mild and damp a character, for it has tested to its utmost the interment of bees. Had it been severe, we might in general have succeeded, and an erroneous impression in favour of it might have gone forth to the world; whereas, now we are assured, that whosoever buries his bees does so at their peril.—A COUNTRY CURATE.

SAVINGS.

WE all know how difficult it is to save money, and the poor especially feel this. The husband may be as hard-working as he likes, and the wife as saving as it is possible to be, and yet, when the end of the week has arrived, the wages are all gone, and there is nothing put by for the rent, or for that day of sickness which must some day overtake us all, even the healthiest and strongest in our parishes. There are many who live merely for the present hour, enjoying *that* as much as they can, but never preparing themselves against a “rainy-day.” This (as all thinking people will agree), is not as it should be, and I hope those who have not thought about the matter, will be glad to hear of a few plans, in order to lay by a little hoard for sickness and for health, for happiness and for misery, for old age and for death. There are two ways of proceeding in order to secure this “little hoard;” but these two ways must be followed together, or my plan would not be completed. I mean, you must lay up a store of holiness, “without which no man can see the Lord,” and you must put by your money for your bodily wants. The holiness that will be of comfort to you in sickness, in misery, in old age, and in death, is not merely that of works, but that holiness of thought, which enables us to say in all our distresses, “It is the Lord, let him do what seemeth him good.” Of ourselves we are unable to obtain this, and thus we are shown that there is another duty to be performed—which is prayer. Nothing can be had without asking. If you want work, do you not seek for it? If you require assistance from a rich neighbour, do you not ask it? and surely you cannot imagine God will bestow his precious gifts to those who do not seek them; “ask and ye shall receive, seek and ye shall find,” is his own counsel and promise. You may, for a time, appear prosperous and happy, without having sought God's assistance, but depend upon it the day will come when you will see the weakness of your own fancied strength, and the “vanity and vexation of spirit” of your former life. God grant that you may not see it too late! And now, having advised you to “seek first the kingdom of God,” I will tell you a few plans for saving your money.

There are very few cottagers, I suspect, who do not dread rent-day coming round. Now, as it is not pleasant to live with a weight on one's mind, I always recommend two additions to their gardens, which prove “friends in need.” These are a *pig* and *bees*. You can get the former up to a very fair size, by feeding him regularly on the produce of your garden, and the wash from the house. Do not, as so many do, begin by giving meal and pollard, but keep the “hard feeding” until he is more than half fat; and then buy some oats (the quantity, of course, must depend on the

size of your pig), and give him those whole, instead of barley-meal; you will find that you are able to fat him for much less than you could do, if he had been fed according to the usual plan; and the flesh will be as good, if not better. If you know any farmer who grows oats, they will generally let you have them, on the promise of being paid when your pig is killed. Do not try and sell your pig till it is killed, you can, generally speaking, get more for it cut up, than when it is alive; besides, you get a couple or three days' dinner from the inside. Directly you have sold it, pay for your oats, and then put the remainder of your money into a drawer, making a promise to yourself not to touch it till your landlord calls.

Bees, in a good season, are very profitable, and as they cost a mere nothing to keep, every cottager should own some hives. Having eased your minds of the burden of the rent, I will tell you how to get a new gown for Christmas! You all know how easy it is to give a penny a-week, but how hard it is to keep it; therefore, belong to a clothing club,—pay in regularly from a 1d to 2d a-week, and, at the end of the year you will receive your own 4s 4d, besides the additional money which the charitably-disposed people about you may add. If any of my readers live in or near towns, many charities are open to them by the payment of a 1d per week. In the country there are fewer; but there are few districts, I suspect, where the cottager could not belong to a club of some sort, or a Provident Society. This latter charity is a most admirable one: by the payment of a small weekly sum you are enabled, when ill, and unable to work, to support your family without applying to the parish, which, I know, goes to the heart of many a poor man to be obliged to do; and yet, unless you belong to a society of this sort, how can you help yourself when ill? Before joining any club examine the rules well, and see who has the management of it, for sometimes clubs are established containing rules which oblige a man to spend money in the public-house, and are otherwise improperly conducted.

There is one other way of laying out your money, which, although it does not bring you in money in return, yet pays you ample, aye, more interest, than all the other places I have mentioned,—I mean pennies expended in schooling. Our children are lent to us by the Lord for a little season, and it is in youth that lasting impressions are made. In a short time, we shall have to render up our account, and if we have neglected our children, what excuse shall we have to offer? In all our English schools children are taught the value of their souls. This consideration alone should make you only too glad to send them; but when, added to this, you know that they are taught to read, write, and work, and are forming habits of industry and neatness, does it not seem madness to neglect the opportunity. Think, when laid upon a sick bed, perhaps for weeks together, what a comfort it will be to them, to be able to pass away pleasantly a few hours by reading; think how much more comfortably they will get on in after life, by having in youth learnt habits of order and study. God has given us His Holy Word, and is it not shameful for us not to insist on our children's learning to read it? A child can scarcely be too young to go to school. If an infant school is in your parish, directly your child can walk it ought to be sent there. Depend upon it, it is happier there than it would be at home, left to itself, whilst the mother is attending to her duties. When your children are obliged to leave school, in order to earn their bread, make them attend regularly their Sunday school. A blessing will attend these means of bringing your little ones to Christ; but, remember, that our children ought to be like Samuel,—“Children of many prayers.” A FRIEND.

TO CORRESPONDENTS.

BEES (H. T.).—Your plan is perfectly practicable. As to the swarm which so mysteriously disappeared, the *wherefore* is not difficult to divine. No doubt the queen was not hived with the swarm; either she did not issue from the hive at all, or she returned thither at the moment the swarm was hived, or she escaped somewhere else, and the bees not being cognisant of her absence in the confusion, but discovering it afterwards, left their new hive one by one, and returned home. One of these reasons will surely explain the mystery, unless, indeed, the swarm was *not carefully* “watched till 5 p.m.,” and so escaped in a body to some previously explored locality. If either of these conjectures is right, you will probably by this time have had the swarm you drove out of the same hive, with, perhaps, the double advantage of its being a *larger* one, and having a *young queen*—and these united advantages are a grand secret in success.

ful bee-keeping. If, however, from circumstances you have to carry out your proposal, of uniting your hives, do it as follows:—Hive cast No. 1 from the old hive, as intended in the new hive. As soon as a cast from No. 2, issues (and should it not issue, it were better, if a *permanent* stock is wanted, to purchase another, and to add to it, as soon as possible), hive it temporarily, and let it stand till dark. Now lift No. 1 gently off its stand, and set it on the ground in an open space at hand, taking care to elevate it on sticks or stones about an inch from the ground on every side. This done, after a short interval of time (say half an hour) bring No. 2 gently to the spot, and with a smart blow dash the bees out of it, close to No. 1. Where there are two assistants, this operation might be better *reversed*, i.e., after duly arranging the stocks on which No. 1 is to rest, let one person dash out the bees from No. 2, on the space of ground between them, while the other instantly, but *gently*, sets No. 1 over them. All jars must be avoided, if there is to be no fighting, but this will not be. The bees of No. 2 thus rudely handled, will march with alacrity to their new hive; the queens will settle their difference during the night, and the swarms be peaceably domiciliated together long before morning, especially if the night has been cool. Nothing then remains to be done, save to restore No. 1 to its stand as early in the morning as possible—say about 4 or 5 o'clock. This plan is perfectly safe and easy. No lights should be used. For the treatment of the old hive, will not the following suggestion be found a good one? A fortnight after the issue of the *prime swarm*, or a little later, it will generally be found that *most* of the brood left by the old queen, has been hatched out, while few, if any, eggs will have been laid by the new one. Let the bees then be all forced out, either by driving or fumigation, and the swarm thus made be joined to the hive *which stands nearest to it*. It is of little advantage to join it to any other hive (and, therefore, to No. 1, if it stand at a distance), as many bees will lose themselves in their certain return to their old quarters, and, attempting to enter the neighbouring stocks, will pay for their invasion with their lives; and this will entail the sacrifice of as many bees of the invaded stocks. If *much* brood still remains in the old hive, it may be treated in the manner explained in *The English Bee-Keeper* (Rivington's), page 102. Should the old hive *not* cast, all the bees might be driven out at the end of three weeks, and put into the new hive, as a new swarm, but they must be fed liberally later in the season, if it is resolved to keep them as a permanent stock. (*A Country Curate*.)

CLIMBERS (*Julius*).—All the climbers you name are hardy enough for the wall, except the common Passion-flower, which will require some little protection for a few years. The reason why you do not find out the names in the dictionary is that you have been taught to spell them wrong. There never was such a name as *Amelopsis*; look for *Ampelopsis*, and if you do not find out all you want to know about it let us hear from you again.

MORPHOLOGY (*Ibid*).—Your cauliflower exhibits a strong case of morphology, such as we have never seen.

CHANGING PITS INTO GREENHOUSES (*W.*).—Your case has met with attention. See Mr. Fish's paper to-day. If not definite enough, write again.

SHELVES OF GREENHOUSES (*William K.*).—In such circumstances have them level. See Mr. Fish's paper.

CAPE SHRUBS (*O. Y.*).—Those named, or most of them, will be killed in winter. The subject will receive further attention.

WARTS (*Constant Reader, London*).—Touch them with nitric acid. Their tops will become yellow, and, in a day or two, dry; scratch off this stained portion, and touch them again with the acid, repeating the process until the warts are removed.

MOSSY WALKS (*Ibid*).—Sow salt over them thickly, then water them, and when quite dry frequently sweep them with a ling or heath broom.

NETTING (*Georgius*).—We know of no book teaching how to make garden nets, but almost any village housewife could teach the boy to net, and you can have them netted to any width and length you require. If employment for the boy is not a paramount object, you had better buy the netting.

TRAINING OUT-DOOR VINES (*Manette*).—If what Mr. Errington says at page 225 does not give you sufficient information, please to put a definite question; but do not ask us to write an essay on Wall Vine-culture.

MILLS FOR CRUSHING CORN.—*W. N. W.* begs to inform *Incubator* that the mills mentioned in *THE COTTAGE GARDENER* for May 23 may be obtained of Barnes and Co., Fenchurch-street, London; Deane, Dray, and Deane, King William-street, London Bridge; or of any respectable outfitting ironmonger for emigrants. The price is from three or four shillings and upwards.

BEES.—*Roger of Monmouth* writes to us thus:—“May 22,—Got a swarm of bees home; hived this day. Description of hive—straw, flat wood top, three one-inch holes in it. June 14—Fed twice before this date, weather being cold and wet. June 21—Put on a small bell-glass, seeing them crowded, which was as soon as any appearance of the least crowding. June 27—Seeing glass full, and much clustering at the mouth, put on one of Mr. Payne's glasses, the former one on the top of it. All seemed to go on very well; they worked well in both glasses, when, owing to the very hot weather, and their clustering so much at the mouth of the hive, being afraid of swarming, which I much wished to prevent, I on the 29th moved the hive half-way round, and gave them a side hive, taking both glasses of the stock hive, and putting them on the side hive. However, I was obliged in about two hours after to move them back again, the bees being in such commotion. Then all seemed to go on well again. I must here remark, I ventilated both hives well. July 1—Fancied I would make the bees work the glasses on the side hive again. Tried them—found it would not do. Removed them back again, and things seemed to go in the old course. At half-past four p.m. looked at the glasses. They were nearly empty. They had swarmed, and hung in a cluster from the bass matting in front of the house, used in shading it. An immense cluster it was—as much, apparently, as would fill a hat. I then hived it into the empty side hive, and placed it by itself in the bee-house, and put the largest glass on it. The smaller I let stay on the stock hive, as the height between the shelves would not allow me to place it in its original position. Did I do right? July 2—This day the

new swarm doing little. Both have left off working in the glasses, and seem to be carrying away the honey from them. I must say I annoyed them a good deal in putting to the side hive, and could not avoid killing many of them. Will you oblige me by saying why they swarmed. Should a second swarm come I purpose hiving it, and joining it to the first, and before winter returning both to the old stock. Shall I do right? Could I prevent swarming merely by placing on such hives Mr. Payne's glasses, and ventilating? if so, I should prefer that plan to the side boxes." You have managed your bees very well, except in altering the position of the hive, and removing the glasses, both which tended to induce swarming: they were going on well, and why not let them continue to do so? Should a second swarm come, hive it, and unite to the first; but returning both to the parent hive in the autumn is a questionable matter, if each one has collected a sufficient store for winter let them remain separate, or even if they require only a few pounds of food. You get finer honey by storifying, and less probability of swarming.

BEES (An Incumbent).—You say, "On a very strong stock, I have placed three supers, one above the other, like a Chinese Pagoda; have ventilated between each adapting board, and have the stock hive an inch from the bottom board, and still the bees hang in a cluster to the edge of the bottom board at the back of the hive, and crowd listlessly all round the bottom of the hive. Some are at work finishing the top super, which is very nearly full of honey. I am only waiting till the cells are sealed. Work is also going on in the middle super, but still many of the bees remain apparently inactive throughout the day. The first super I put on in the last week of April. I should also mention that I have given about the third of an inch betwixt the adapting boards, just so that a bee might struggle through, were he to try hard. Do they require more ventilation yet? My second strong stock, united last autumn, has, much to my surprise, swarmed, and left a super half full of comb, partially filled with honey, notwithstanding prett fair ventilation had been given by raising the hive. I fancy though that the bees of the next adjoining hive, which were very weak, had joined them, having, perhaps, lost their queen, or from some other cause. Would not a super twice the size of those mentioned by Mr. Payne, be more suitable for the honey season? they would be so much more readily ventilated, and less trouble of ascent for the working bees?" You have managed your ventilation remarkably well, nothing more could be done but shading them from the sun. It was the extreme heat of the few days previous to the date of your application, that caused the clustering, which of course subsided when the heat abated. The union of your weak stock with No. 2, was very probably the cause of its swarming. A super twice the size would not afford honey of so pure a quality, which is the only objection.

BEES (W. A. E.).—Put on the glass, as a condenser, in September, and let it remain on till the end of February. It will be found better not to put on the glasses till the hives are quite full of bees, and give signs of inconvenience for want of room; the strength of the stocks and the season must determine the time. Sprinkling your hive inside with beer and sugar did much in preventing the bees going up.

BEES (E. B.).—If economy is an object, use Mr. Payne's cottage hives; but if not, Mr. Taylor's amateur bar hive.

HEN EATING EGGS (Minna).—Feeding her upon egg-shells, was an ingenious mode of teaching her the practice. We know of no remedy but to kill her. That all your hens do not do the same, can only be explained upon the general fact that some animals are more easily taught to do evil than others.

STRAWBERRIES FOR FORCING (J. L. B.).—For very early production, employ the *Roseberry* and *Grove-end Scarlet*, to be followed by the *Keen's Seedling*, and *British Queen*, for later production. As you find "*Princess Alice* one of the finest, best-flavoured, and best bearers," why not continue to employ it? We never forced either that or the *Elton*. The *Hautbois* has some plants which bear only male, or barren blossoms, if you remove all these you will have no fruit. About one out of five should be left.

BEES (Apiphilus).—The shrub you mention, "bearing small yellow flowers in the shape of a ball," is probably *Budlea globosa*, it flowers in June, and is generally covered with bees; but there are some yellow-flowered shrubs of the genus *Zizyphus*, though not known to us as bee-flowers. We believe that Mr. Payne, if applied to, will obtain for you a "*Kitchener's ventilated passage*," if you send him a post-office order for five shillings.

CAMPANULA CARPATICA (Verax).—As soon as the seedlings were fit to handle—say about the middle of last May—they ought to have been hardened by exposure to the open air, except when very cold, and before the end of the month they would be fit to plant out in little patches, on a nursery-bed in the open air, from which they would be fit to be removed by the middle of August, when showing flower-buds. Plant out your seedlings immediately, on a spare corner, three inches apart every way, either in single plants or little patches. No frost will hurt them next winter; and in April plant them out where they are to flower.

ROSE CUTTINGS (Linda).—Cuttings of all roses may be put in for the next six weeks under a north wall, without glasses, with every prospect of success. The moss round the balls of your bedding plants should have been well wetted, and also the balls; then, if the whole had been kept moist for the first three weeks, retaining the moss would have been advantageous, but the very reverse if once allowed to get dry till the roots spread through it; because, if once dry, the moss would drain off the water, so that the plants must have perished.

THE POTATO DISEASE (Alfred).—We have not seen a symptom of it, but Mr. Bowman, of Penzance, says—"It is making rapid progress here, and has become very general both on the hills and in the vales. In many fields the leaves and stems are quite destroyed. I have been obliged to draw the tops, as the only chance of saving the produce. The only manure used was a light dressing of soot and sea-sand. Whole potatoes were planted in January." Now, we think Mr. Bowman was somewhat hasty in his proceedings, for we are quite sure that black leaves and stems occur yearly, without the tubers below them being at all diseased.

BEES (Clericus, Beds).—You say—"I purchased a stock at the beginning of April; at the end of that month, according to THE COTTAGE GARDENERS' directions, I cut a four-inch hole in the top of the hive,

and put on one of Mr. Payne's small hives. This super the bees never visited, in spite of the guide-comb, except to eat barley-sugar, which I placed for them within it, on the adapting-board, during the unfavourable weather that followed. They never visited it until the 19th June! when they immediately began to build to the piece of guide-comb. The very next day, I perceived the super to be so crammed with bees, that I thought more room must be wanted; I, therefore, lifted the super, and put between it and the stock-hive a small box (Mr. Payne's size and description). The bees filled both box and super at once, and the next day swarmed! I have four swarms; on one (of the 31st May), is a super, in which the bees began to work on the 27th or 28th June. On another (of the 14th June), I placed a box on the 28th June (too early you will say, but they being out so thickly then, I thought they must need room), and they are working away famously in it to-day, the 30th June,—they took to it at once." In the first-place (as the season proved so cold), you placed the small hive upon your stock too soon; it is always better to wait till the bees in the stock-hive are somewhat inconvenienced for room before putting on the small hive, then they will take possession and commence working in it immediately. And, again, your bees should have been well-established in the small hive, and have nearly filled it, and shown evident signs of want of room by clustering at the mouth before supplying the box. You placed your box upon the swarm of the 14th June too soon, however, your swarms appear to be doing well.

GARDEN BONNET (Anne B.).—The best answer we can give you is this, from another correspondent who signs herself "Marian."—"I beg to send you a description of a most cool and comfortable garden bonnet, as you have before published articles on gardening costume. Take a piece of lining muslin, or coloured print, $\frac{3}{4}$ long by $4\frac{1}{2}$ wide; fold down a quarter of a yard, the long way, inside out, to form the front, which run together at the ends; turn it right, and make two more runnings parallel to the former ones, equi-distant from the middle, and about 19 or 20 inches apart; fold it together, the two front corners together, and the two back corners together; run up the back, and hem the back of the curtain. Now take another strip of the material, or anything else, and run it on to make a drawing behind—the lower running should be a continuation of those in the front; go from one to the other, draw up the back from the curtain to the top with strong thread; slip a well-fitting piece of pasteboard into the front, and tack it in; sow on the strings, and your bonnet is complete. If your lover does not like it, and you in it, it is not my fault. These bonnets are almost universal in some parts of the west of England, where they are called milking or sun bonnets; and much rustic taste is frequently displayed in their make and trimming."

NEW IRIS (Marian).—Your French white Iris, with a yellow flame, and purple dotting in centre of each petal, we consider very handsome, and an acquisition.

NAME OF PLANT (T. S., Clonmel).—Your plant is *Campanula speculum*, or Venus's Looking-glass, a very pretty annual, not so much grown as it ought.

NIGHT-SOIL (Julius).—This mixed with ashes and other refuse is a very powerful manure. It must be put in very small quantities upon flower-borders; and is best suited for heavy soils. For cabbages, asparagus, rhubarb, and other kitchen-garden crops cultivated for their leaves, it is best suited. Answers to other queries next week.

BOOK ON ROSES (Clericus).—The best work giving coloured illustrations of choice Roses, is by Mr. Curtis, the rose cultivator, near Bristol. It came out periodically, but we do not know whether it is still publishing.

BUDS (Ibid).—We know of no nurseryman or florist who will sell these so that you might have them by post. The first one who advertizes his willingness to sell cuttings and buds, will reap a good harvest. The only objection to planting a rose-stock where you wish the future tree to remain, is that if your buds fail it is an unsightly object; and so, indeed, it is if they succeed, until after a year or two's growth. The *Cottage Gardeners' Dictionary* is published by Messrs. W. S. Orr and Co., Amen-corner, and may be had in three-halfpenny weekly numbers or in seven-penny monthly parts.

SILVER-SPANGLED FOWLS (K. O. T.).—Our correspondent wishes to know where he can obtain a cock of this breed; a last year's bird would be preferred.

ARTICHOKE (G. S. P.).—We cannot answer your query better than by giving the following extract from our *Cottage Gardeners' Dictionary*:—"Winter Dressing.—As soon as a stem is cleared of all its heads in the summer, it should be broken down close to the root; and early in November the beds should be dressed for the winter. Cut away the old leaves close to the ground, but without injuring the centre or side shoots. Fork over the bed, throwing the earth in a ridge about eight inches high, over each row; putting it close round each plant, but being careful to keep the heart free from the crumbs of soil. After this has been done, pile round every plant some long litter or pea-haulm, three or four inches thick; and to keep this from blowing away, as well as to help in preserving the roots from severe frosts, cover over the litter, or haulm, two inches deep with coal-ashes. The ashes may be turned into the soil in the spring, being a manure much liked by the artichoke." Your *British Queen Strawberries* dying off whilst other varieties, their neighbours, are in perfect health, is no uncommon occurrence. The *British Queen* is one of the most delicate and uncertain of our strawberries. Frosts injure it which would not be felt by other varieties, and it is liable to root-decay, as in your case, without any apparent cause.

NAMES OF INSECTS (E. P.—, Exeter).—The small brown beetles are the *Anobium striatum*, the grubs of which destroy furniture in houses. They should be destroyed whenever they appear in any numbers. The *Curculio* found on the elm, bramble, &c., is the *Otiorynchus sulcatus*, and is a great enemy of the gardener. The bee is the *Chelostoma florissomnis*; and the *Cassida* is *C. rubiginosa*, of Illiger (*C. viridis*, of Latreille).

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20 " " " " " "	4	0
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24 " " " " " "	5	0
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2 in. diam...	0	2 ditto	0	3
3 " " " " " "	0	3 " " " " " "	0	4
4 " " " " " "	0	4 " " " " " "	0	5
5 " " " " " "	0	5 " " " " " "	0	7
6 " " " " " "	0	6 " " " " " "	0	10
7 " " " " " "	0	7 " " " " " "	1	1
8 " " " " " "	1	8 " " " " " "	1	4
9 " " " " " "	1	9 " " " " " "	1	8
10 " " " " " "	1	10 " " " " " "	2	0
11 " " " " " "	1	11 " " " " " "	2	8
12 " " " " " "	2	12 " " " " " "	3	6
13 " " " " " "	2	13 " " " " " "	3	6
14 " " " " " "	3	14 " " " " " "	6	0
15 " " " " " "	4	15 " " " " " "	0	0

CUCUMBER TUBES.

24 inches long	2	0
22 " " " " " "	1	10
20 " " " " " "	1	8
18 " " " " " "	1	6
16 " " " " " "	1	4
14 " " " " " "	1	2
12 " " " " " "	1	0

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5 " " " " " "	0 7 .. 0 9
6 " " " " " "	0 9 .. 1 0
7 " " " " " "	1 0 .. 1 3
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9 " " " " " "	1 6 .. 2 0
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14 in. long	..	0 0	..	3 3
15	..	2 0	..	0 0
16	..	0 0	..	3 6
18	..	2 3	..	4 3
21	..	2 6	..	0 0
24	..	3 0	..	0 0

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	¾ inch thick.	¾ inch thick.	¾ inch thick.	¾ inch thick.	16 oz.	21 oz.	26 oz.	32 oz.
24 inches by 12 ..	s. d. 1 6	s. d. 2 0	s. d. 2 8	s. d. 5 0	s. d. 0 11	s. d. 1 3	s. d. 1 9	s. d. 2 0
20 " " " " " "	1 5½	1 11	2 7	4 10	0 10½	1 2½	1 8½	1 11
22 " " " " " "	1 5	1 10	2 6	4 8	0 10	1 2	1 8	1 10
20 " " " " " "	1 1½	1 6	2 0	3 8	0 8½	1 0	1 5	1 6

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WEEKLY CALENDAR.

M D	W D	JULY 24—30, 1851.	WEATHER NEAR LONDON IN 1850.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bef. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in In.						
24	Th	Swallow-tail Moth seen.	29.025 — 29.909	76—49	S.	15	13 a. 4	59 a. 7	0 31	25	6 9	205
25	F	St. JAMES. Ds. CAMB. B. 1797.	29.813 — 29.628	65—50	S.	10	15	53	1 5	26	6 11	206
26	S	Wild Marjoram flowers.	29.716 — 29.066	69—54	W.	06	16	57	1 49	27	6 11	207
27	SUN	6 SUNDAY AFTER TRIN. Swifts depart.	29.807 — 29.729	62—62	W.	26	17	55	2 43	28	6 11	208
28	M	Everlasting Pea flowers.	29.989 — 29.904	65—54	N.	01	19	54	scts.	29	6 11	209
29	Tu	Smaller Skipper Butterfly seen.	30.109 — 30.066	72—52	N.E.	—	20	52	8 a 41	1	6 10	210
30	W	Chamomile flowers.	30.197 — 30.150	74—54	N.E.	—	22	51	9 11	2	6 8	211

An author giving us an enlarged and accurate view of the gardening of this country, did not appear until the reign of Charles I., and then in the person of JOHN PARKINSON. He, like his literary predecessors in the art, Gerard and Johnson, was a botanist and man of medicine, as well as a gardener; an union of scientific pursuits naturally occurring in an age when physic derived its remedies chiefly from plants; when to be an apothecary, was to be "a culler of simples," and when he necessarily was best provided with these, and with a knowledge of them, who, like Gerard and Parkinson, had "a Physic Garden."

John Parkinson, was born in 1567, according to the date on his portrait prefixed to his "Paradisus," and was by profession an apothecary, and so eminent as to act in that capacity to James I. Yet he does not appear to have held it as more than an honorary appointment, for when the death of the king was announced to be the result of murderous treatment, a Dutch apothecary only is named. Thus Dr. Goodman says:—"Truly I think that King James every autumn did feed a little more than moderately upon fruits: he had his grapes, his nectarines, and other fruits in his own keeping; besides, we did see that he fed very plentifully on them from abroad. I remember that Mr. French of the Spicery, who sometimes did present him with the first strawberries, cherries, and other fruits, and kneeling to the king, had some speech to use to him,—that he did desire his majesty to accept them, and that he was sorry they were no better—with such like complimentary words; but the king never had the patience to hear him one word, but his hand was in the basket. After this eating of fruit in the spring time, his body fell into a great looseness, which although while he was young did tend to preserve his health, yet now, being grown toward sixty, it did a little weaken his body, and going to Theobalds, to Newmarket, and stirring abroad when as the coldness of the year was not yet past almost, it could not be prevented but he must fall into a quartan ague, for recovery whereof the physicians taking one course, and the plaister another, I fear the king was wronged between both: and I wonder why the king's surgeons, as I take it, Mr. Watson and others who opened the body, had not been examined, as likewise Mr. Woolphengus Banger, the king's Dutch apothecary, a very honest man, who did there daily attend; yet I confess, in my own particular, I had some informations both from him and from the surgeons, and in truth I was not well persuaded of the death of the king, nor of the Marquis Hamilton."

Parkinson was also a distinguished horticulturist and botanist, his "Theatre of Plants" obtaining for him, from Charles the I., the title of "Botanicus Regius Primarius." His knowledge of plants was not obtained merely from books, for he spent nearly forty years in travelling (Paradisus p. 63.), and was proprietor of a garden well-stocked with scarce plants. The time of his death is not ascertained, but it occurred between 1640 and 1650. His first publication was—"Paradisus in sole Paradisus terrestris, or a garden of all sorts of pleasant flowers which our English ayre will permitt to be noursed up, with a kitchen-garden of all manner of herbes, rootes, and fruites for meate or sause, used with us, and an orchard of all sorte of fruit bearing trees and shrubbes fit for our land; together with the right orderinge, planting, and preserving of them, and their uses and vertues. 1629." This folio has an engraved title page representing the garden of Eden, a portrait of the author, and 109 woodcuts of fruits and flowers. The dedication is to the Queen. A second edition appeared corrected and enlarged, after his death, in 1656. In 1640 appeared his "Theatrum Botanicum, or Theatre of Plants, or an Herbal of large extent, &c."—The most extensive botanical work then extant.

The first portion of the title of his work to which we shall confine our attention, was intended to convey, in Latin, that it described the contents of his own garden—"The Terrestrial Paradise, Paradisi of a Park, in sole, in (the) sun." This "Paradisus," we learn from the dedication, was written long before it was published.—"Some through an evil disposition" having charged him with having obtained the work from some other person—a charge we may believe to be without foundation, as we have no mention of it but in his own preface.

In the first chapter he considers, "The situation of a garden of pleasure, (i. e. a flower-garden,) with the nature of soyles, and how to mend the defects, &c." Sheltered from the north; and not on the east, or on the west side of the house, not on moorish ground, or near any manufactory, that may taint the air with smoke, "especially of sea coals which of all others is the worst, as our City of London can give proof sufficient, wherein neither herb nor tree will long prosper, nor bath done ever since the use of sea coals began to be frequent therein." Black mould he thought the best soil for it, and stiff clay the worst. In "The frame or forme of a garden of delight or pleasure," his plans are the very quintessence of regularity and formality, yet one remark is judicious—"The fairer and larger your allies and walks be, the more grace your garden shall have." In speaking of the herbes, &c., of which the borders of the beds may be formed, he says that germander used before his time to be employed for this purpose, as thrift was chiefly then, germander, however, was still in use, because "the cuttings are much used as a strawing herbe for houses." Hyssop, marjory, savory, and thyme, were employed for the purpose, but lavender cotton was in greater request "of late daies, being rare, novel, and for the most part but in the gardens of great persons." Juniper and yew were also used, but he recommends above all the box, though it was "only received into the gardens of the curious." Of dead materials for edgings, sheet lead, oak boards, shank

bones of sheep, tiles, round whitish pebbles, are severally admired, but especially the last "for durability, beauty of the sight, handsomeness in the work, and ease in the working and charge,"—but jaw bones, "used in the Low Countries, are too gross and base." In writing "Of the nature and names of divers outlandish flowers, &c.," he mentions of Daffodils "almost an hundred sorts," including our Narcissus, Jonquil, &c., and of Fritillaria, "half a score." Hyacinths above 50—of the Crocus 20, spring and autumn-flowering, &c., Meadow Saffron many varieties. Lilies 20, including Crown Imperials, and Martagons. Of Tulips, "which are the pride of delight almost infinite," he had 160 in his own possession, yet he doubted not there were ten times as many. So generally was this flower admired, that he says scarce any lady of worth but was a delighter in them. Anemonies (Lobel, gives a list of 38 varieties), Bear's Ears or French Cowslips, Flower-de-luces, Hepaticas, Cyclamen, Leucoium, Musk Grape flower, Star flowers, Spiderwort, Wolf's Bane, Christmas flower, Bell flower, Yellow Lark-spur, Flower-gentle, Flower of the Sun, Marvel of Peru, Double Marsh, and French Marigold, double Red Ranunculus, Jasmynes, double Honeysuckles, Ladies Bower, Roses, Bay Cherry, Oleander, Syringas, Pyracantha, Laurustinus, and Mezereon, conclude his list of flowers, &c., "to be planted in gardens of pleasure for delight." "Of such flowers as being cultivated in this country for a great length of period, were considered as English flowers," he mentions Primroses and Cowslips, yellow and green, both double and single—Single Rose Campions, white, red, and blush—double red Rose Campion—Nonsuch white, blush orange, and double orange—Batchelor's Buttons, white and red—Wall-flowers, double and single—Stock Gilliflowers—the single "in every woman's garden"—"the double possessed by few."—Queen or Winter Gilliflowers—Violets—Snapdragon—Columbines, many varieties, single and double—"Larkes heeles, or spurres, or toes"—many single and double, "the double rare"—Pansies—Double Poppies—Double Daisies, many varieties—Double and French Marigolds.—Carnations and Gilliflowers many, they being "the queen of delights and of flowers," "and that because Carnations and Gilliflowers be the chiefest flowers of account in all our English gardens" he treats more largely here of the "true manner and order to increase and preserve them." Propagating them by layers he says is "of later invention." To protect the Carnations from earwigs, some persons place them in cups with a rim full of water round—a totally inefficient remedy, as these vermin are gifted with wings. The whole chapter contains as judicious directions for the culture of this flower as any that modern times have produced—the only point on which he does not afford instruction, being the nature of the soil best suited to them. Modern ingenuity has improved the arrangement, and conveniences for sheltering them—but Parkinson's mode of culture is little altered to this day. Pinks—Sweet Williams—Sweet Johns, many—Paeonies, single and double—Hollihocks many, single and double—Roses many, "the white, the red, and the damaske are the most ancient standards in England."

In speaking of "The Ordering of the Kitchen-garden," he says:—English seed of the following kinds was esteemed more than any that were imported, viz., Radish, Lettuce, Carrots, Parsnips, Turnips, Cabbages, and Leeks, yet to raise Cabbage seed was very difficult in our climate, the stocks being spoiled by the severe winters, to obviate which "they bring them into the house, and there wrap them either in cloths, or other things to defend them from the cold, and hang them up in a dry place until the beginning of the March following, &c." But little Onion seed was grown by gardeners here, and that "for their own, or their private friends spending." His observations on Melon growing demonstrate the ignorance which existed as to forcing; for though he directs the seed to be sown in a hotbed, it was not to be done until April, and the plants were to be moved out into very rich soil without bottom-heat, and to "cover them with straw, (some do use great hollow glasses like unto bell heads) or some such other things to defend them from cold evenings or days, and the heat of the sun while they are young and new planted." The Melon he says was eaten with pepper, salt, and wine.

Speaking of Sallet Herbs, he commences with Asparagus, "a principal and delectable sallet herbe," which was boiled and eaten with butter and vinegar. Of its cultivation he is cursory, and nothing nearly so correct as Cato in his "De Re Rustica." Lettuces, (eleven sorts) Cabbage and "open Lettuces" that were to be tied together that the inner leaves may become whitish." Spinach "a sallet that hath little or no taste, and, therefore, cooks know how to make many a good dish of meat with it, by putting sugar and spice thereto." Cabbages and Coleworts (eleven sorts) were almost confined to the poorer sort of people, yet some might be dressed so as "to delight a curious palate." The mid-ribs of the leaves were boiled and eaten cold with vinegar and oil. Cauliflowers "are to be had in this country but very seldom, for that it is hard to meet with good seed." Endive, plain, and curled. His mode of bleaching in sand, is still the best that can be practised. Clove Gilliflowers, mixed with sugar and vinegar "make a sallet now-a-days in the highest esteem with gentles and ladies of the greatest note." Rhubarb (Rhea raponiticum) was introduced by Parkinson, being sent to him "from beyond sea" by "Mr. Dr. Matth. Lister." Artichokes (eight kinds), but of these "our English red Artichoke is in our country the most delicate meat of any of the other, therefore divers thinking it to be a several kind, have sent them into Italy, France, and the Low Countries," where they always degenerated in two years. The Chardon "we cannot find the true manner of dressing, that our country may take a delight therein."

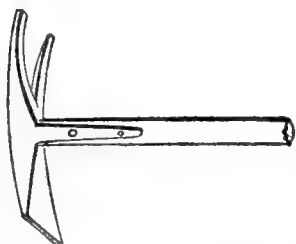
Kidney-beans "almost infinite sorts and colours," "more oftentimes at rich men's tables than at the poore." Melons (three kinds). The best seed from Spain, formerly "only eaten by great personages," "but now divers others that have skill and convenience of ground for them, do plant them, and make them more common."

His directions for grafting are generally correct, and in accordance with our present practice. He especially insists upon budding, in preference to grafting, for all stone fruit, "but though sufficiently known in many places of this land, yet as I understand, good gardeners in the north parts, and likewise in some other places, can scarce tell what it meaneth." He recommends vinegar to be applied to the canker of trees, a practice chemistry supports, since Vauquelin has demonstrated the disease arises from the alkaline state of the sap. His plan of preventing ants ascending trees by tarring the stems, and of preventing the attacks of hares and rabbits, by smearing the trunks with a mixture of cow-dung and urine, are practices still in use. The Vine, he says, is a fruit-tree formerly grown in abundance in vineyards, especially by the Monks, the wine of which supplied them year by year; "but they have long since been de-

stroyed, and the knowledge how to order a vineyard is also utterly perished with them." He mentions many gentlemen having tried to have them, bringing Frenchmen over to attend them, but the produce was uniformly "small and heartless;" and the Vine in his time was scarcely attended to, even when grown against a wall.—Oranges, he says, were grown in large boxes, to be pulled into the house, or under a wall, covered with a sear cloth, and "some comfort in the colder times" was given them by a stove. This is the first rude attempt that we have notice of by an English writer, approaching to the idea of a hothouse or conservatory, and which with the notice we have before of bell-glasses, was evidently leading to their construction; no tent or mean provision, he continues, will preserve them.

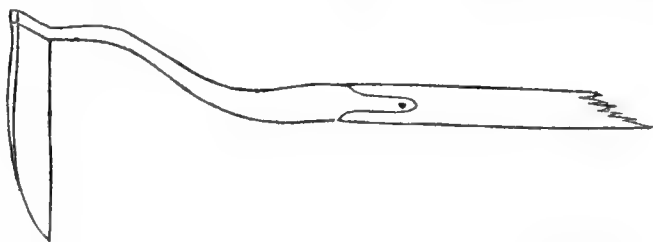
METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-four years, the average highest and lowest temperatures of these days are 74.4° and 51.8° respectively. The greatest heat, 92°, occurred on the 25th in 1844, and the lowest cold, 40°, on the 24th in 1838. During the period 102 days were fine, and on 66 rain fell.

NEVER was a saying more true than that "man is a bundle of habits," and it is equally true that no practice is so absurd that habit cannot render it agreeable. What but habit could reconcile a New Zealander to a long bone thrust through his nose? and upon what other plea could the Irish defend attaching their horses to the plough by their tails? Habit is, indeed, second nature; and it is only upon the plea of habit that we find that we can defend our adherence to the old form of our *Hoes*, without any suspicion that that form might be advantageously modified, according to the purpose for which the hoe is intended. For loosening the surface, or destroying the weeds of hard soils, our common hoes, or their modification, the Guernsey prong, are very efficient implements; and as we have mentioned this prong of the Channel Islands, and it is not so generally used as it deserves, we will make it known to all our readers. It was thus delineated and described in the pages of the *Gardeners' Chronicle*:—



"It is something in the shape of a hammer, the head flattened into a chisel an inch wide, and the fork the same. The whole length of this prong is nine inches, and it is attached to a staff five feet long. Such an implement is light and easy to use, it requires no stooping, and will tear up the deepest-rooted weeds."

Now no one will argue that this implement is not a more efficient tool for weeding our hard surfaces than our common hoes; nor is *Gidney's Improved Prussian*



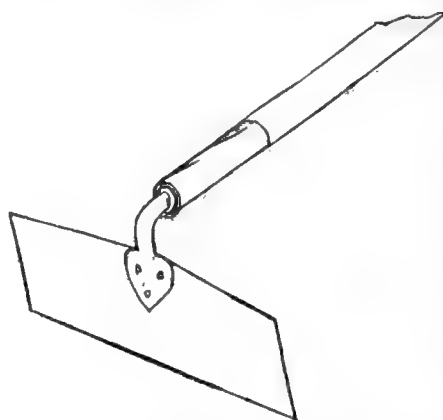
Hoe less superior for weeding on loose surfaces. Its manufacturer thus speaks of it:—

"It is an exceedingly useful hand-tool, both for the flower and kitchen-garden; it will do twice the work with half the labour of any description of hoe now in use; and it not only cuts and destroys the weeds, but leaves the ground perfectly level without the use of the rake. To the farmer it will prove of great utility, not only in eradicating all kinds of weeds from crops, but in clearing grass-lands of thistles, &c."

Now we can say of this report, what cannot always be said of a proprietor's laudatory statement, every word of it is truth. We have tried the hoe, and we say, without

any reservation, that it is the best weeding implement for garden borders, beds, and smooth side paths, that we ever employed. The blade is set at such an angle that it shaves down the weeds, just below the surface, and leaves them uncovered; whereas the old hoe covers up the fallen weeds, and thus aids them to root afresh. The Improved Prussian Hoe reduces the amount of labour, being worked with the greatest ease, and from the position of the blade keeps itself sharp; and is in this also superior to the common hoe, which is worked at an angle constantly rounding off its edge.

We have restricted our praise to the Prussian Hoe's employment upon soft beds and smooth paths, and for working upon them no one, whether a professional, amateur, or lady gardener, but will thank us for inducing them to try it; but for weeding harder soils, for earthing up, for drawing drills, &c., the old hoe is not yet superseded, but it may be improved; and one of its deficiencies, which all must have noticed, is the usual mode of fixing it to its handle, by wedging this through an eye welded to the blade. In wet weather, such an implement becomes clogged by adhesions in the angle between the blade and the handle; and in dry weather, the blade becomes loose, thus decreasing its efficiency, and often separating from the handle entirely. To remedy this in Norfolk, they employ the Bloomfield Hoe, which, as represented in this sketch, is fastened into the handle



by a strong spike, having a long narrow neck terminating in a broad head, to which the steel blade is attached by three rivets, whilst the handle is kept from splitting by a deep ferule. Of this hoe Mr. *Gidney*, who is an ironmonger at East Dereham, in Norfolk, thus speaks:—

"It has been in use in this part of the county for some few years, and I believe has not been introduced into any other county. It is called by us the Bloomfield Hoe, after the inventor, who resides in this part of

the county. You will observe it is capable of doing all the work of the common hoe, with the advantage of keeping itself clear of mould at the neck, and is generally used by gardeners, cottagers, and labourers on farms; in fact, many farmers would rather present their labourers with one than that they should use the common hoe of their own, particularly in hoeing turnips or carrots, as the workmen are enabled to see the plants so much more clearly, and, of course, are not so liable to cut out those plants required to stand."

These implements we strongly recommend to our readers, but we would have the implements, at the same time, speak a lesson to them—we would have these simple tools suggest that no implement is so common, or so time-hallowed, as to be exempted from, or unworthy of, improvements.

Our readers will remember that at page 209 we printed a letter from a gentleman, in which he stated that "there is not a single statement founded in fact," in what was narrated in our "Gardening Gossip" about the Cheltenham Floricultural Show. The writer of that narration showed that every word of it was correct, and we now, at the request of the gentleman who denied its truth, publish the following:—

"I regret exceedingly to find, that through an unintentional mistake on my part, I have impugned the veracity of your journal, and given you the trouble of answering my letter. I thought that your strictures applied to the *Cheltenham Horticultural Society and its Show*, and if you will read my former letter over, you will see at once that such was my impression; the cause of my having made such a mistake is easily explained. A friend of mine called on me, and said, 'Have you seen the charges brought against the Horticultural Society in *THE COTTAGE GARDENER*? I wish you would read them, for I think they ought to be answered, as I hear it much talked of, and it will be a great injury to the society if left uncontradicted.' I was leaving Cheltenham next morning for some days, but I got your paper, and in the limited time I could give to the subject, I did not perceive that the charges you brought were against the inhabitants of Cheltenham and the so-called 'monster show,' and not against the Horticultural Society. With regard to those charges, I believe from what I have heard they are quite correct, and I regret that such is the case; and hoping that this explanation will be a sufficient apology, &c."

GARDENING GOSSIP.

THE approaching *Dahlia Shows* in September begin to excite attention. All, or nearly all, of them will have a class for new flowers; and those who grow most will win them, unless those who grow but few have made choice of the best. We place *Shacklewell* first among the Metropolitan Shows, although it may not be the largest. The *South London* will be next, although the judgment has generally been vicious. The seedling certificates here are totally worthless, because, with a view of getting a greater variety, they only require three blooms of a dahlia growing the second year; this leads to scores being shown which could not be exhibited if six blooms were demanded, and certificates being given for varieties so uncertain, are utterly worthless. The next show of importance will probably be at *Notting Hill*, where preparations are making upon a great scale,

under two or three experienced growers and well-known amateurs. There has generally been a good exhibition at *Cremorne Gardens*, but last year the show was ill-managed, and the proprietor's liberality was all but thrown away. There was nobody who understood the management, and the amount of prizes was a good deal regulated by the advice of the people who meant to win them.

We think the sooner everybody concerned with these things advertise the days and the prizes, the better it will be for the shows. Three-fourths of the shows are comparative failures for want of advertising in time and enough. The *Cremorne Show* last year was scarcely known in time to give anybody a chance, except those who had the getting up of the affair, and their immediate acquaintances, and the same may be said of some others; not a week should be lost in advertising any that are to be "open to all England."

The use of *Sulphate of Ammonia* as a fertilizer was strongly recommended some years ago in the *Gardeners' Gazette*. Mr. Groom, of Clapham Rise, spoke to its efficacy on several occasions, and from a highly distinguished amateur, at Staines, we have the following testimony:—

"Sulphate of Ammonia, in the proportion of half-an-ounce to a gallon of soft water, has been used by me with uniform success to geraniums, fuchsias, and other florists' flowers. It must be used liberally once in four or five days." We have acted on this, and used it the same as we have on other days used ordinary water. It is of the greatest service when those things have filled their pots with roots, and require shifting; for the use of this fertilizer, instead of plain water, about every fourth watering, gives, as it were, new life, and vigour, and colour, to foliage that begins to look pale. Sometimes it excites almost too vigorous a growth.

The gossip of the London circles rather points at a mutiny in the ranks of *The South London Florists*. That they are a little involved is true enough, but not more so than the committee could square by a small contribution among themselves, or than could be easily paid off if members in arrear would pay their subscriptions.

Surely it has been a laxity in the management to allow some of those in arrear to use their privileges of free tickets. Some members are for a break up, and others decline continuing their subscription; but the straightforward, upright leaders have proposed a subscription to pay off incumbrances. Many people wonder at the state of affairs, seeing that the proprietor of the *Surrey Gardens*, besides providing them with tents, bands, and entertainments, and admitting the members and exhibitors, and two friends to each member, free, gives the Society forty pounds each show towards their prizes. If the proprietor gave the same amount, and allowed everybody to show without paying a fee of 7s. 6d. per article, or a pound a-year for the privilege, he would have far better shows, and every exhibitor would pay the shilling admission money with pleasure.

Greatly to the credit of the proprietor of *Vauxhall Gardens*, he has paid one hundred and fifty pounds in prizes, although the receipts did not pay the ordinary expenses; so that he is at present out of pocket all the prize money, and the extra cost of fitting up tables, &c. He gives one more show notwithstanding.

It has been suggested, and with some show of consistency, that as the best fruit shows at *Chiswick* and the *Regent's Park* fall very short of the display in the middle-row of *Covent Garden market*, the Horticultural

Society should carry out their system of management for pot culture, by having *fruit shown in pots or tubs*.

Those who have seen the dwarf cherry trees that used to be grown in pots at Hampton Court, and know what is to be done with various fruit trees, will acknowledge that the market-looking assemblage of fruit at horticultural shows is so inferior as to inspire disgust. Let the pine be shown on its plant, forced fruit on their trees, grapes on their vines, and strawberries in pots. Skill would be then fairly represented; and as to the effect, it will not bear a comparison.

E. Y.

NEW PLANTS.

THEIR PORTRAITS AND BIOGRAPHIES.



HAIRY DIDYMOCARP (*Didymocarpus crinita*).—*Botanical Magazine*, t. 4554.—This genus belongs to a large group of plants (Cyrtrandraceæ) which inhabit many parts of the world, but chiefly India and the Eastern Archipelago. For a long time they were regarded as a natural group, distinct from all others; but Dr. Brown united them to *Gesnerworts*, of which they now form a section, distinguished chiefly by their double revolute or twisted seed-cords (placentæ), a conformation which is well explained by the name of the genus *Streptocarpus*, which name signifies a *twisted pod*, and also by this, which furnishes the subject of our present biography, *Didymocarpus*, from *didymos*, double or twin, and *carpos*, a fruit or seed-pod, a name to which some objections have been made on account of its not expressing the *real state* of the seed-vessel; which is not double, but having double placentæ, like the rest of the families in this section of Gesnerworts. The name originated with Dr. Wallich. Its nearest affinity is with *Chirita*, and, in the Linnæan system, it belongs to the second order of the fourth class—*Didynamia Angiospermia*. It is a native of Pulo Penang; has been in cultivation here for five or six years, and, like many more of the low herbaceous Gesnerworts, this and other Didymocarps is highly to be commended to the attention of the amateur of small means, and who can only secure head-room for a select few in his moist stove.

It is not only a native of Pulo Penang, but of the neighbouring district of Singapore, whence it was sent by Mr. Lobb

to Messrs. Veitch, of Exeter, and exhibited by them in 1847. *Stem* about nine inches high, shaggy, with purplish hairs; *leaves* opposite, shaped like those of the Primrose, toothed, dark, rich velvety-green above, purplish carmine, and penni-nerved beneath; *flowers* on stalks shorter than the leaves, corolla shaped somewhat like that of *Achimenes*, but with tube much larger in proportion to the lip, creamy-white, with yellow within the tube; calyx, four segmented, red-tipped; two of the stamens sterile.



SMOOTH-FLOWERED BOUVARD (*Bouvardia leiantha*).—*Gardener's Magazine of Botany*, ii. 97.—This genus was named in commemoration of Dr. Charles Bouvard, at one time superintendant of the Royal Gardens at Paris. The species, with but two exceptions, are scarlet-flowered, and all being natives of the temperate regions of South America, bear very well to be plunged in our borders during the summer, but require to be returned into the greenhouse early in September. They ought to be more cultivated, for when grouped together they look very rich, and bloom from July until the end of October. *Bouvardia* belongs to the Natural Order of *Cinchonads*, and to 4-*Tetrandria* 1-*Monogynia* of the Linnæan system.

Bouvardia leiantha is a native of Guatemala, and bloomed for the first time in this country at Mr. Salter's nursery, at Hammersmith, during the summer of 1850. *Stem* nearly three feet high, erect, robust, downy, branches terminating in very compound three-branched cymes of flowers; *leaves* in threes, embracing the stem, dark green, pointed egg-shaped, wrinkled, and white-haired on both sides; *flowers* with long tubed, 4-cornered, crimson corollas, with their mouth or limb divided into four triangular lobes; style with a two-forked stigma. It is easily propagated both by cuttings of the young shoots and of the roots.

THREE-COLOURED VANDA (*Vanda tricolor*).—*Paxton's Flower Garden*, ii. 19.—This stove orchid will be found noticed, and full directions given for the culture of the genus, at p. 254 of our fourth volume. A more unmeaning name than *Vanda* could not be devised. It is the Sanscrit name for one of the species in India, Sanscrit being a dead language used only among the Brahmins in their writings. As Lavoisier reformed the nomenclature of chemistry, so do we hope some botanical

Lavoisier will arise to correct the absurd gibberish of this science. It was but the other day we had to



explain that the name of a plant meant jumping-for-joy, and that this was employed because the finder of the plant was frantic with pleasure at finding water near the place where it grew! It would be difficult, in the whole annals of science, to find a deeper stain of folly.

Vanda tricolor is a native of Java, whence it was first obtained by Messrs. Veitch. Its leaves are in two opposite rows, channelled, and shorter than the raceme of flowers; flowers with leathery-clawed sepals, which are pale yellow, spotted with crimson; lip, 3-lobed and purple striped with white; spur, short and blunt.

B. J.

THE FRUIT-GARDEN.

RETARDING FRUIT.—This is really an interesting and useful theme, and we can only wish the remarks about to be offered had been made three weeks sooner, being persuaded that, to carry the principle out most effectually, a somewhat early commencement is necessary. The benefits of retarding many of our fruits are very considerable, as bearing on the subject of long succession, and an ample supply for the dessert-table. Moreover, when taken in connection with modes of acceleration, independent of in-doors or forcing matters, it is evident that ample means are within reach of the cultivator—means seldom called fairly into action, and which admit of much consideration with a view to future progress. As before observed in these pages, fruit-culture is, doubtless, capable of more improvement than any one division of horticultural affairs. To convey an idea to our unpractised readers of what *may be done*, it will be well to offer a list of some of our out-door fruits, pointing to the probable length of succession through acceleration and retardation:—

	Accelerated.	Retarded.	Gain.
Strawberries	2 weeks...	4 weeks	6 weeks
Gooseberries	3 do.....	8 do...	11 do.
Rasps (the ordinary kind)	2 do.....	3 do...	5 do.
Currants (White & Red)	2 do.....	12 do...	14 do.
Do. (Black)	2 do.....	2 do...	4 do.
Cherries.....	3 do.....	8 do...	11 do.
Plums	2 do.....	3 do...	5 do.
Pears	3 do.....	3 do...	6 do.

Such may convey an idea of what can be done in this way; and will, at one glance, serve to show how impor-

tant it is to take such things fully into consideration. Indeed, how often do we hear it remarked, that Mr. A. has still gooseberries quite fresh; at which Mr. B. is astonished, and instantly calls his gardener "to book." Mr. C. has dined out at Mr. D.'s in the end of August, and quite surprised to find May-duke cherries as plump and fresh as in June; and a dish of fine Elton strawberries on the table. Now these are not speculative ideas, but genuine facts of every-day occurrence, and point to the necessity of a due attention to both the acceleration and the retarding of fruits as a very necessary branch of garden economics.

Of course the acceleration consists mainly in collecting superior *sites* for the trees. It does not, however, lay in every one's power to take every one of the fruits in this list "by the hand" in this way. To *retard* is, however, in every one's power, and requires very little experience; labour, or rather a little attention in due time, being the principal thing.

Now, in doing this, there are, as in everything else, certain principles which must not be lost sight of. It will not suffice to place a heavy shade over a tree at the "eleventh hour," and keep it there in a continuous way for several weeks. By so doing, the proprietor may be disagreeably surprised some day to find all his currants, which were so fresh and plump when covered up, hanging in clotted, shrivelled, and mouldy groups, and the trees half destroyed into the bargain. We must here admit, that our own experiments this way are too limited, at present, to enable us to show forth principles equally applicable to all our fruits. This is one of the gardening points not yet sufficiently investigated, and in which there is much room for advance. Such things, we are aware, may not be settled in a dogmatical way, but require to be submitted to actual experiment. With these necessary preliminary remarks, we trust there will be no harm in examining the subject by the light of what knowledge is at present extant; and then the whole may stand in a somewhat hypothetical position for the present.

It would appear, then, that there are three distinct periods in the seasons when an amount of retardation may be carried out without any important injury to the tree. Of course, any person *may* adopt one, two, or the whole. The first period may be dated at, or rather just before, the bursting of the bud, in early spring; the second, just before the fruit takes its last swelling, or just after the process termed "stoning" is completed; and the third, when the fruit is ripe, or nearly so.

With regard to the first period, it is now well known that, to retard the opening of the blossom, is to increase the chances of a milder atmosphere, and, by consequence, the "setting" of the fruit. Here, then, it would appear, two objects may be carried at once. The retarding, however, must take place betimes in the spring; it will not do to commence a heavy shading when the blossoms are expanding. Such a proceeding should commence even before any visible swelling of the bud takes place; perhaps the very beginning of February for most fruit. At this period we would use a thick covering; for no injury could accrue to the trees so early by even a *total* exclusion of light. Ordinary garden mats, old carpeting, or even such material as oil-cloth, would, doubtless, answer well. The latter painted white, to reflect the solar rays, would, probably, answer exceedingly well. Whatever the material be, it would be well to select it on the ground of non-conducting properties; inasmuch, as any augmentation of temperature within the cover would soon tend to "draw" the young bud. Such a cover might remain on until the bud beneath was actually bursting its winter coat, when it might be removed, and canvass or bunting substituted for it. The latter material will now suffice for the remaining process. Henceforth, the spring retarding would have

to be carried out with a special regard to the blossom-bud, and would speedily resolve itself into protection of blossom.

We pass on now to the second period of retardation, namely, a little before the fruit in question commences its last swelling. This period, of course, varies in our fruits; but it is well known, that nearly all of them, after the first swelling, remain stationary, to all appearance, as to their extension, for some weeks; the strawberry, and, perhaps, the rasp, excepted. We have repeatedly covered fruits at this stage, and accomplished the end in view without any ill effect; and, therefore, dare recommend it. With regard to such fruits as the gooseberry, the currant, the rasp, and such-like hardy fruits, the covering may be allowed to produce a considerable amount of shade; but with our more tender things, as the peach and the nectarine, the shading can scarcely be too light.

The last period of retardation, as before observed, must, of necessity, be when the fruit is ripe. Everybody knows that ripe fruit, in general, may be kept a good while, even when gathered, if proper means be taken. How much more so when adhering to the tree. Now the same conditions are requisite in both cases, namely, as low a temperature as possible, and a slight circulation of dry air. Whatever the material be, then, by which the tree or bush is shaded, it should not be impervious. We find canvass, possessing a stoutish thread, yet with tolerably open meshes, the best thing. Unquestionably, however, improvements will, before long, take place in such materials for garden purposes. Impervious materials, or things of a McIntosh character, might answer well, it may be, better than the canvass; but the amount of attention required would be too much for ordinary cases, inasmuch, as such covers would require to be taken off every fine day, or, at least, once or twice a week, in order to prevent the lodgment of damp.

In all cases of covering, in order to retard fruits, it is most essential that they be frequently examined. Be as careful as we may, circumstances will occur when mouldiness, damp, &c., will be engendered, and prove fatal, unless a free circulation of air is permitted; this, too, even in the most genial seasons. If so, what must be the case in ungenial ones? Besides all this, some seasons are notorious for a deficiency of solar light; no cut-and-dry rules, therefore, for shading fruits can be rigidly adhered to. All requires caution, and a careful consideration of those principles on which not only retarding depends, but the future welfare of the trees. It has been well observed "there is no royal road to geometry," and neither is there to gardening. The best of plans, supposed to be founded on correct principles, may be nullified and set at nought by unexpected contingencies. Verily, our old poets were right in affirming "there is no rose without a thorn." Thornless roses there may be, but they will not repay the trouble of plucking.

R. ERRINGTON.

THE FLOWER-GARDEN.

ROSES.—No sooner do we get the flower-garden up to the full standard of our ideas of perfection, as they now are, or ought to be, than we begin to think of how we can improve it, or, at any rate, provide for it the year following. Every one who can afford an extra bed next year, cannot do better than go to work immediately with the cream of all the new roses. *Geant des Battailles*, the best one in every respect for planting by itself, in groups, or in beds. For such a purpose, if the soil is light and rich, it will do as well, if not better, on its own roots as if worked on the dog-rose; and cuttings of it put in now, under a hand-glass, or even without a glass behind a wall, will be ready to plant out in the

beds next February, and be ready to bloom abundantly next summer. There is no way of showing off this most splendid rose half so well as having it entirely by itself. It should never be disgraced by working it rampant-mop fashion, as a standard. Tall standard roses are getting less fashionable every year, and I rejoice at the change. Nothing above three-feet stems are now admitted into first-rate gardens, with people of good taste; and for rose-beds, if they are budded just out of the ground, it is better than anything higher. At the present moment, I would bud every rose sucker that I could find, all over the garden, instead of pulling them up as we usually do; and, for the first two or three years, I would let them take their chance. If the suckers were from some old standard, the new rose, or, indeed, any roses budded on them, would help to hide the ugly, naked stems, and by that time, or sooner, some good genius of the rosary might kill or injure the head, leaving a full bottom and a choicer sort or sorts behind. This is the only way I know of for reconciling us to part with an old favourite standard rose, which we ourselves, or some one dear to us, had budded years ago. This is an experiment I have over and over again indulged in, and I always found it as I say. About seven or eight years since, I had a beautiful little rose, a perpetual, on a tallish standard. It did not seem quite at home, and the standard was prone to make suckers. I budded some of the strongest of the suckers, about a foot from the ground, with *Gloire de Rosamene*, which we did not know then to be so loath to grow on any but its own roots. I also budded about a hundred of it on different stocks that same season, all of which have been dead long since, except the one on the sucker; but that one grew away famously, and soon hid the naked stem, and sucked the juices from the roots, so as to hasten the downfall of the little favourite rose, which was cut away at last, leaving one-half of the stem for a stake to the Rosamene, and there it is to this day, and, perhaps, the only real good-worked plant of the sort, and of the same age, in the country.

But there are top as well as bottom suckers to be dealt with, when one is short of stocks. Many old standards, when they get hide-bound, and also some young ones that are not vigorous enough to take up the sap as fast as it comes to them, cause the stock to push out a strong shoot or two just below where the top was budded on; and nine persons out of ten snap off such as soon as they can see them, but that is very bad practice. What they cut them off for is, as they say, because they rob the lawful head of the portion of the sap which flows to their own wild, luxuriant leaves,—a plausible theory, certainly, but it is founded in error, and it is most certainly against the laws of nature to cut out such suckers at all the first season, and more so, if the head has been languishing for the last year or two. The right way to deal with wildings issuing from just below the head of a standard rose, is to see that they do not get above the head, by stopping them. There is no question about these shoots being able to rob the head, and ultimately to kill it, perhaps, if they were allowed to grow on in their own way; but it is equally true that, in a few months, two or three wild shoots, if not allowed to gain more strength than those forming the head, would be capable of renewing the health and strength of both stem and head of an unhealthy rose-tree. Practice, in a thousand instances, has proved this theory to be the true solution of what we gardeners call "robber-shoots," and few things can be more easily explained than how all this is brought about.

Take a standard rose of any age or size in any garden in England, and unless the head is one of the climbing sorts, or what we call weeping-roses, it is two to one if the stem is healthy. A dog-rose will fight its way in a

rough hedge for twenty or thirty years, and be the most vigorous plant, in spite of all opposition from neighbouring trees; the same planted in a rich flower-garden-bed, without a twig to dispute its sway, would grow away in that time to double or treble the size and strength of the one in the hedge, provided that it was allowed its own way, and never pruned or disturbed. This is its nature; but no sooner do we cut its head off, and put on a less vigorous one, than the natural law which governs its growth is violated; the new head cannot appropriate all the store which is natural for the roots and stem to provide, and sooner or later the stem gets hard and dry, or hide-bound, and thus a sure foundation is laid for the future attacks of insects, disease, and all the other incidents peculiar to a bad rose season. It is not, however, for the purpose of explaining more particularly, on this occasion, how all this is brought about, that I have mentioned the subject, but to tell of the way in which I have myself dealt with rose-trees having a propensity for breaking out into top-suckers, either from the wild stock, or from the collar of the union where the first bud was inserted; for I look on both kinds of shoots as proceeding from the same cause—the pent-up energy of the flowering-sap, through some defect in the head. Let us take the wild shoot to illustrate my meaning: to rub it off with a view of letting some sap or more strength into the head is just the reverse of the good intention; you might just as well open a canal or railroad to an old out-of-the-way town to increase its traffic, and then lock up the passage. My plan is to build a new town at the end of the passage, and let the old one take its chance. I would bud the wild shoot by all means, and never stop it till October, even if I used a bud from the old head itself. By the end of the season, the wild shoot will have made a direct and free passage between itself and the roots—a free communication between the extremities, which was wanting for years past. Next winter the wild shoot would be cut three inches above the bud in the usual way, the old head would be left entirely unpruned, so as to receive as much as it could of the rising sap, until such time as the new bud had expanded into a fresh head, capable of drawing up all that the roots could muster for its wants. I have seen so much of the renovating effects of this plan on roses and other plants that had I never heard of such a thing as vegetable physiology at all, I could lay it down as a sound theory, that robber-shoots from the upper part of a plant were occasioned by some stoppage of the sap in the neighbouring parts; that in certain cases, as in that of the rose-tree, it is best to let the robber rob away to the end of the season, but in other cases, as when the adjoining shoots are to be cared for in another season, the secret way is to stop the luxuriant shoot as soon as it has made a dozen or so of leaves, and that in neither case should the strong shoot be rubbed off until the season's growth was ripe and finished, and for this simple reason, that the shoot itself, or rather let us say, the formation of it, can only open an upward passage; that two distinct passages are essential to a perfect circulation in plants, and that the leaves only, *and leaves of a ripe age too*, are capable of opening a downward passage. Therefore it follows that rubbing off these strong shoots cannot tend to any good, and may cause a good deal of harm.

On the other hand, strong suckers from the bottom of a rose, or any other plant, can never add to its strength, but the contrary, and such ought always to be removed; further, side-shoots almost always issue from newly-planted rose-stocks, because the head is so much cut in that it cannot appropriate all the rising sap which must overflow, as it were, in these side-shoots. It is very foolish, therefore, to rub off these side openings, because that can only bring the circulation—I

mean the upward move—to a dead lock; and it would be just as improper to let the side-shoots grow away as they would, because the whole strength or sap from below might flow into them at the expense of the upper parts—hence it follows again, as we must not rub them off, nor allow them to grow onwards, the only course left for us is to stop them, and that is most certainly the true way of dealing with them, but it does not matter much whether we stop them at the fourth, sixth, or tenth leaf—any thing between these will do just as well. It is customary with all of us gardeners, nurserymen and all, to stop, or cut back a little, the wild shoots on a rose-tree as soon as the buds have taken, as we say, for two reasons: to keep the wild heads within bounds, so that we can get among them, if we want; and by cutting them short, their own weight, “when stormy winds do blow,” will not cause them to snap off just at the top of the inserted bud, as they often do where the cross-cut was made to let in the bud. Now the two reasons are very good, but the plan itself is just the reverse; and although we think very little of it, it is not too much to say, that nine-tenths of all the diseases incident to standard-roses take their origin from these very cuts. According to the strict laws of vegetable growth, as far as we understand them, rose-shoots that are budded after this time should not be cut before the end of September, and all of them should then be cut to different lengths from the bud, according to their strength, or say from four inches to a foot; but, if the buds have grown, those that have been budded early, as all Perpetuals are sure to be, the wild shoots ought to be stopped—but *not cut back*—as soon as the shoot from the bud is six inches long. By merely breaking off the point of the wilding you stop the onward flow in that direction, which must then run into the next open channel which is in the young shoot from your bud. The effect of cutting back the wild shoot too near the budded part, before the new shoot itself is strong enough, is to cause a stagnation in the flow, and here is the key of the whole story, and which the youngest tyro who reads this letter may prove in one week. He may go to the nearest bush or tree, select a leading, or any stout shoot of this season's growth, and if it is two feet long, let him cut off sixteen inches: that is, cut off two-thirds of its length, which is about equivalent to our term “cut back;” then after a few days let him try and bud on the stump, and, if the bark will rise, I shall never be a philosopher. But, apart from reasoning and physiology, whoever will take my advice, and plant a bed of the *Geant des Batailles* rose, let him or her be further advised, and plant a row or ring round it of the rose *Souvenir de Malmaison*.

D. BEATON.

GREENHOUSE AND WINDOW GARDENING.

FOREIGN SEEDS.—Some time ago, the gardening world was aroused by the noise made about “A Packet of Seeds saved by an old Gardener,” this, or something like it, being the quaint title of a publication, which editors and reviewers for the most part united in praising to the echo. At this distance of time, we cannot speak positively, but we recollect the impression left on our mind was, that with a great amount of shrewd, calculating, plodding prudence, and withering satire withal, there were certain drawbacks, which would have prevented our wishing that without one *beware*, the seeds of this celebrated packet should be sown broad-cast into the comparatively virgin soil of the hearts and intellects of our rising youth. Be this as it may, the hard rubs at certain unworthy practices, created quite as much sensation in certain circles, as the arrival of a huge packet of foreign seeds does to the mind of the honest

gardener, already crippled for want of room and resources; these seeds being sent by some dear friend of his employers, accompanied with a request that all should receive a fair trial, and with descriptions on each packet sufficient to make the uninitiated believe that each and every of them were gathered from plants that for elegance and beauty were unrivalled "on this side of the moon." Of course, we allude not to those seeds sent home by regular collectors who know what they are doing; nor yet of seeds sent home collected by gentlemen who have botanical and floral tastes, and a fair knowledge of what has been already introduced, as well as of what of these have been set aside, as unworthy of being grown for decorative purposes; for in such cases gardeners would be but too anxious to have a hand in rearing and flowering them. But we allude to the great mass of flower seeds from abroad that reach the hands of amateurs and gentlemen fond of, but young in, gardening; seeds gathered by a friend, who, though extremely ignorant of plants at home, is supposed to be perfectly conversant in the *beautiful*, the *good*, and the *new*, when he gets located on some far-away island, or remote continent; or culled by some one equally skilled with himself, to whom he has delegated the responsibility; or to save trouble and bother, obtained from the *seedsman* in the locality, to whom he has given a *general order*, and who, looking at the matter in a commercial point of view, may be more interested in quantity than quality. *These* are the collections that the gardener looks upon with dismay. He knows that after all his care and trouble in sowing, pricking out, potting, watering, &c., not one plant in a hundred will be worth the keeping; and that one, probably, will require treatment which he cannot give, owing to limited means and conveniences. All that is worth retaining he might have got from a nurseryman for a shilling or two, and saved pounds expended in carriage and labour, as well as the pain of witnessing blank looks from his employers, from disappointed hopes. Advocates as we are for straightforwardness in everything, as constituting ever in the end the best policy, as it the only honourable one, we could not greatly condemn those *side* measures the gardener tries for evading altogether the touching of these *fine* seeds; one of the most successful of which is getting the responsibility of rearing them fixed upon the shoulders of some one possessing larger means and in whom his employers have great confidence; and who, after looking sagely over them, and duly, with thanks, acknowledging their reception, *so manages the matter* that few, or none of them, are ever more heard of. Am I wrong in making such statements? Many would say, undoubtedly so. I think not. Those with limited means should grow what is proved to be worth cultivation; and for the management of which they have suitable means. Packets of exotic seed, in their case, should consist *entirely* of novelties or scarcities. Even then, it would often be to their interest to get them reared by tradesmen who have extensive means at their command. Division of labour here, as everywhere else, tends to the benefit of the consumer. We could give many an illustrative anecdote about these rickled up packages of foreign flower seeds. One, some years ago, amused us vastly. As a return kindness, we were offered a share of plants reared from foreign seeds, collected and sent home at great trouble and expense, by a friend of the family. Nicely the seedlings looked in a sweet hotbed; but there did not appear to be a novelty among them. It was evident the seedsman, and not the excursion amateur, had been at work. But the best of the joke was, that most of them were *annuals*, that would have been more at home if sown in the border in April; and my impression was, that it was likely these identical seeds had crossed the water first, before re-crossing it again to their present locality.

Let me not be misunderstood; I have no wish to damp the ardour for raising plants from seed. There is a pleasing *appropriating* principle about *them*, which you can hardly feel in the case of plants purchased. There are other cases, in which plants so reared are looked on with affectionate interest, as *momentos* of the past, and foreshadowings of the future, and that scarcely the less though the individual plant be rough and weedy-looking. But as a general principle, where space is limited, there should not be much doing in plants from seed, about the properties of which you can manage to learn little until you see them. Seeds of established favourites can generally be procured *cheapest* in the home market. If, however, some friends still prefer receiving packets from abroad, we would still oblige them if we could. I will, therefore, give a more detailed answer respecting plants so raised by a correspondent of last week, and then mention some things to be attended to in the successful germination and growth of such seeds.

First, then, the inquiries are these: "Will Cape shrubs, raised in England, from seed sent from the Cape, grow out of doors without protection during the winter?" Few, or none. The *place* where seeds are raised makes scarcely any difference as to their power to resist damp and frost. Our correspondent evidently is influenced by views held by some, of our ability by successive sowings, to naturalise plants that are too tender for our climate, but we see little proof for such an opinion. Secondly. "If hardy enough, should they be planted out *now*, or kept in the greenhouse until next year?" Plants that are in the least tender are the better for being some size before they are transferred to the open air. If still growing freely, the larger the better, if the roots are not injured. Many climbers in greenhouses, many plants that are half-hardy, turned out against conservative walls, receive a check which they may require years to get over, merely by turning them out in a very young state. Thirdly. "Different plants may require different treatment; what in that case should be that of *Templetonia*, &c.?" Here the first thing that strikes us is that the seedsman at the Cape, rather than the collector, has been instrumental in sending the seeds of these shrubs; as several out of the few mentioned, are not generally supposed to be natives of the Cape! The first-mentioned is a native of New Holland. *Templetonia* requires to be grown in sandy peat, with a little fibry loam, well drained. Temperature in winter seldom below 40°. *Templetonia glauca* is a nice plant, with crimson flowers, and might be tried against a conservative wall, where it could receive a little protection, and the roots be kept dry during the winter.

New Zealand Willow.—We hardly know what this is, unless it be the *Leptospermum scoparium*, which bears large white flowers, on long flexible shoots, and is one of the few *Leptospermums*, that are natives of New Zealand. Treatment similar to the above, with more loam in the soil, and might also be tried against a wall. This is not a native of the Cape!

"*Meterosideros*."—Grow it in equal parts of sandy loam and peat. Temperature in pots not below 38° to 45°; where plants were abundant might also be planted against a wall and protected.

"*Kennedya purpurea*."—We presume you have *monophylla* or *microphylla*, for which use two parts sandy peat, one part fibry loam, with a little charcoal, and broken pots mixed with it, to assist good drainage. Temp., 40° to 48° in winter. We have seen *rubicunda* and *prostrata* tried against a conservative wall, with fair chances of success.

Yellow Cassia.—Think it very likely that yours may be *Cassia Barclayana* or *Australis*, both of which produce showy yellow blossoms for three months after *Mid-*

summer in the greenhouse. Equal portions of peat and loam suit it. Temperature in winter, 40° to 48°.

"*Strutiola*."—This is a genus of neat greenhouse low shrubs; some of them flexible in their growth, bearing small flowers along the slender shoots. They grow best in almost entirely sandy peat; the stronger growing may have a little fibry loam.

"*Caleana*."—If we mistake not, this is a New Holland terrestrial orchid, requiring protection in a greenhouse or cold pit in winter, and to be grown in peat and loam.

Protea.—Several species, but treatment similar: I have never seen them grown out-of-doors in winter, but I think that many of them might be tried against a conservative wall, as the whole order to which they belong is very interesting from their foliage alone, and as some *Banksias*, *Grevillea rosmarinifolia*, *Hakea acicularis*, &c., have stood against such walls in the neighbourhood of London, though they come from localities similar in temperature, &c., to that enjoyed by many of the *Proteas*. Interesting though they be, when grown in pots and tubs, and either placed or plunged out-of-doors in summer, they always have something of a stilted appearance, and we can only expect to see them in their beauty when residents in such a place as the Crystal Palace, when converted, as it is hoped it will be, into a winter garden. The soil that suits them best is a fibry, rather close loam, with plenty of drainage. When our friends obtain THE COTTAGE GARDENERS' DICTIONARY, many of such enquiries will be totally unnecessary; until then, it is desirable that too many inquiries should not be made at one time. Having filled our space, a few hints on sowing imported seeds must be left to another opportunity. If such seeds were selected with more care, or if as now collected there were fewer sowings, there would be fewer disappointments.

R. FISH.

HOTHOUSE DEPARTMENT.

EXOTIC ORCHIDACEÆ.

PLANTS THAT THRIVE WELL IN POTS—(Continued from page 229).

ONCIDIUM CULTURE.—We described, at the above page, the first section of these fine plants, and their culture up to the point of flowering. As soon as the flowers expand, place them in a cooler house, or a cooler part of the Indian house, and cease syringing them over the flowers. Take care, however, that the roots are duly supplied with water, but not too much, or they will damp off. This water should be of the same temperature of the house. As the flowers spring from the base of the young leaves, the growing them on is of consequence, whence arises the necessity of continuing the application of moisture. The air of the house should also be kept moist, for the same reason. When the leaves have attained their full size, the amount of moisture should be considerably lessened, but not entirely removed, because the leaves have such a large surface to evaporate, that they would shrink too much if kept quite dry, even when at rest.

Second Section.—The distinction between the two sections is, that the first have large leaves, and very small, if any, pseudo-bulbs. *O. lanceanum* exemplifies it sufficiently. The second has generally large pseudo-bulbs; *O. leucochilum* being the type. The culture, as far as regards the potting and compost, is the same; but as these are generally natives of more temperate climes, the hills of Guatemala, for instance, they do not require the heat of the Indian house; in truth, many of them will grow and flower well in a common stove. At the commencement of these papers on orchids, it was mentioned, that to grow orchids to perfection more than one house was desirable, and the cooler one was de-

scribed under the name of the Mexican house. Now, where there is such a convenience, that house is the place for this section of orchids. In this house they will grow stouter and stronger; the pseudo-bulbs will be larger, and the flower-stems shorter, more branched, and more densely flowered. During the season of growth, they must be liberally supplied with moisture, both at the root and in the air of the house; but when the growth is completed, the water must be entirely withheld, as the pseudo-bulbs, in this case, contain a sufficient quantity of succulence to support them through the season of rest. Several species, such as *O. altissimum*, *O. sphacelatum*, and others of similar habit of flowering, produce long, slender flower-stems very numerously. In order to show them off to the best advantage, four or five rods, three feet long, painted a light green, should be thrust round the edges of the pots at equal distances; a hoop, the same diameter as the pot, should be placed about half-way up the rods, and each rod tied firmly to it, at equal distances. The tops may then be drawn gently together at the top, and tied firmly with copper wire. Round the outside of this neat trellis, commencing near the pot, tie the flower-stems at equal distances from each other; the small branchlets can be tied in as they advance in growth. Continue to tie in the main branches in a spiral manner, and by the time their growth is completed they will have completely covered the trellis. The flowers will then be seen in a mass, and be highly ornamental and effective. With the above treatment, this fine and extensive genus will grow well and flower abundantly.

PAPHINIA CRISTATA (Crested P.); Trinidad.—This beautiful plant was formerly known as *Maxillaria cristata*, but has been recently separated from that genus by Dr. Lindley. The sepals and petals form a kind of star-like appearance, reminding one of the genus *Stapelia*. They are of a dark chocolate colour, tinged with purple; lip white, barred with purple, and fringed with long hairy-like processes. The pseudo-bulbs are short, almost round, and the leaves, three or four to each pseudo-bulb, are broadly lanceolate. This is a neat, pretty species, with large showy flowers, very desirable, but scarce. 84s.

Culture.—This plant is found growing in close shady places in the warmest part of Trinidad, and requires, therefore, the warmest part of the orchid-house. It thrives best when the compost has, from being kept in a shady place, become covered with moss grown naturally upon it. Pot it when it begins to grow, early in March, in the usual compost of turfy peat, chopped sphagnum, charcoal, and broken potsherds. Drain it well, by filling the pot half-full of potsherds. Give plenty of water when growing, and syringe over head frequently. When the pseudo-bulbs are fully grown, give it plenty of rest, by withholding water, and reducing the temperature of the house 10° or 15°. It is rather difficult to grow, but a little extra care will overcome that. The finest plant we know of is in the collection of Mr. Rucker, of Wandsworth. Upon that plant we have frequently seen five or six of its truly beautiful flowers.

PANTONIA ROSEA, named in honour of Mr. Paxton (Rose-coloured P.). The flowers are produced upon a stem a foot high, and are allied to the genus *Bletia*; they are of a pleasing pale rose colour. Requires the same treatment as the *Bletia*. This is an elegant species, of easy culture.

T. APPLEBY.

FLORISTS' FLOWERS.

MR. GLENNY ON FLORISTS' FLOWERS.

The *National Floricultural Society* was well attended at their last meeting; and there were some novelties

worth notice. We do not profess to understand how a named flower exhibited last year can be submitted this year as a seedling, unless it be upon the ground of its all being in one hand, thus Mr. Turner exhibited as a seedling *Dodwell's Mary* PICOTEE, a noble well-made flower, with a narrow edging very perfect. It had a certificate and deserved it; although the white is not so pure as some, it is free from spots or stains, and its creamy shade does not much detract from a good flower. *Prince Arthur* was commended, we hardly know what for. Mr. Townsend exhibited six POTENTILLAS, under number, which should not be. No 3 was a deep brown crimson, and No. 4, bright scarlet orange, both promising, because new and striking; we saw no distinguishing mark to them. PHLOX MAYII, exhibited by Mr. Henderson, was striped purple and straw, but a bad scalloped form. This was commended, nevertheless. PICOTEE, *Cassandra*, was a flower of good substance, with not enough petals to make three rows, and, moreover, scalloped a good deal. *Diadem*, larger, fuller of petals, deeper feather on the edge, and not without bars and spots, and edges rather rough. PINK, *Titus*, by Mr. Edwards, very large loose petals, guttery, and soft, but, withal, the best of the large varieties. GLADIOLUS, *Rosamundi*, shewn with a dozen others by Mr. Staines, was worthy of notice, which the remainder were not; it was a brilliant scarlet with white ribs, and the name given is in bad taste. ANTIRRHINUM, *Sulphur colour*, shown by Mr. Edwards, had a first-class certificate. Now, although we admit it was superior to the other sulphurs, it could not deserve a first-class certificate. CALCEOLARIAS from Mr. Major had travelled badly. They were much the same as hundreds we have seen this year; No. 1 was, however, an advance; No. 9 and 11 pretty. FUCHSIAS, one named *Diamond* was the most ill-grown plant we ever saw, evidently crowded up among others, and drawn up like wires; but it was as perfect a specimen of reflexing as we could wish. It turns back like a Martagon lily, and exposed a noble corolla. The petals are too narrow, but it is a gain for all that, and when well-grown will astonish the growers. *L'Elegant*, white and deep pink corolla, reflexes a little and gracefully too, but it is no advance on our whites. *Ariel* turns up its sepals like four hooks, not gracefully, and is no real advance. Another called *Banks*, No. 1, was clearer white, reflexing a little, short, thick, broader sepals, and may come on among the pale varieties. But the only novelty among the fuchsias was *Diamond*, ill as it was grown. VERBENAS, *National*, is a compact, good-trussing variety, dull red. *Koh i noor* was shown again; we do not alter our first decision; it is not of a good form, the divisions show too plainly. A plant of *Purple Rival* was commended. A dirty purple fancy GERANIUM, most unaccountably named *Fire-ball*, was commended, though there are many scores of better ones. A seedling STRAWBERRY, *Windsor Castle*, was a most noble variety.

At the *London Floricultural*, Mr. Hunt showed a number of seedling *Pansies*, Mr. Smith *Verbenas* and several other flowers, of which we shall say more.

FLORISTS' FLOWERS CULTURE.

THE PELARGONIUM.—Like the fuchsia, this beautiful genus is now a true florists' flower. It has been brought to its present state of comparative perfection by the same means,—hybridizing. The first that we remember was named *Daveyanum*. It was raised by a Mrs. Davy, the wife of a nurseryman of that name, who resided somewhere near Chelsea. It was said that Mr. Davy kept it in his own possession till he had 200 plants, which he sold at five guineas each. It caused quite a sensation in the floricultural world, and hybrids were

raised from it by scores. Mr. Loudon, in his first edition of the *Hortus Britannicus* (1830), enumerates 262 of hybrids, which he denominates *garden varieties*, very few of which are now shown, if at all in existence. *Daveyanum* was a free-flowering bright-coloured variety, and would most likely be now considered one of the *fancy* class. We should be glad to see it if alive yet in any out-of-the-way place in the country.

Propagation. By Seed.—This is the only way to raise superior varieties. To improve those already in cultivation ought to be the aim of every raiser of seedlings. The first and most important point is *form*, the next is substance, the next size, and the last colour. To these may be added habit and truss; save seed only from such as possess already these points approaching to perfection. Hybridize such, that is supposing there is in the collection a well-formed flower, but deficient in substance, size, colour, habit, or truss; then take the pollen from such varieties as possess the needful requisite, and dust it upon the stigma of the properly-formed flowers. *In all attempts to hybridize, let the one to bear the seed possess the property of form.* This is the cornerstone of success. In order to obtain the other properties wanting, cut off the anthers of the well-formed variety before the pollen cases shed their contents; and the moment the hybridizing is performed, cover the flowers with a close fitting cap of fine muslin net, to prevent insects from carrying strange pollen to the stigma dusted with pollen from such varieties as have the desirable properties. When the seed is ripe, gather it carefully, and divest it of its arills, or feather-like appendages, wrap it up in paper, and keep it in a dry drawer, in a cool room, till spring. Sow it early in March, and place it in a gentle heat; a hotbed that has been at work for a few weeks will answer admirably. Sow in wide shallow pots, well-drained, in a light rich compost, press the seed down gently, and cover it about a quarter-of-an inch. If the seed is good, it will quickly germinate, and should then be removed from the hotbed, and placed upon a shelf in the greenhouse near to the glass. Water very moderately, or the plants will be apt to damp off. As soon as the seedlings have made their second leaf, pot them off singly into two-inch pots, in a compost of loam and leaf-mould, in equal parts, with a liberal addition of river sand, finely sifted. Replace them on the shelf, and shade for a time from hot sunshine. If all is well and properly done, with the necessary amount of water, the seedlings will soon fill these small pots with roots. They must then be re-potted into a size larger pot, and may then be treated in the same way as such as have been propagated by cuttings. Keep them close to the glass, and give abundance of air on all favourable occasions. As soon as the weather will permit, place them out-of-doors, upon a bed of ashes of sufficient thickness to prevent worms from entering the pots. The situation should be an open one, the grand object being to ripen the wood, and induce a stocky or bushy habit, so as to insure them flowering the following season. The size of pots to flower them in need not be more than four-and-a-half inches. When there is a fear of autumnal frosts, remove them into the greenhouse, and place them on a shelf, at such a distance from the glass as will serve to keep them dwarf and bushy. There is no need to top them in the manner recommended hereafter for plants raised from cuttings, the object being not to make fine specimens, but to get them to flower as quickly as possible the spring following. Whenever that takes place, then commences the difficult task of selection. Many a flower may be showy in colour, an abundant bloomer, and apparently a beautiful variety; but if it is deficient in one point, and more especially the important one of form, it is useless as a florist's flower. This brings us to consider what are the *properties of a first-rate Pelargonium*. Form is

the first; the flowers should be nearly flat, neither too much cupped, nor in the least reflexed. Each petal should be nearly equal in size, rounded at the end, and quite smooth at the edges. The whole flower should be as near a perfect circle as possible. They should be of such a substance as to keep their form when expanded. If thin and flabby, they will turn backwards and forwards as they advance in size, and the general effect will be marred. The size of each bloom should be at least one-and-a-half inch diameter. The colours should be clear, distinct, and bright; the edging of the upper petals should also be uniform; the dark blotch should never run into the edging. The habit should be rather dwarf than otherwise, and it should flower freely; the truss should stand up well above the foliage, and the number of blooms forming the truss should never be less than five; each flower-stem should be long enough to bear the flower as high as to form an even truss. Now, if any of the seedlings possess these points pretty near perfection, a great point has been achieved, and the variety possessing them should be grown freely, cuttings put in, and every care taken of it; but if deficient in any one essential property, either give it away, or plant it in the garden till the frost destroys it. Never keep a seedling that is deficient in the least in form, but constantly aim at perfection. T. APPLEBY.

(To be continued.)

THE KITCHEN-GARDEN.

ROUTINE WORK.—Sow the new seed of *Angelica* as soon as ripe, so as to have plants in readiness for next

spring. The *Globe Artichokes* of this season's planting should be supplied with good soakings of water if dry weather continues to prevail, or the autumn crop will be small and deficient. Put out liberal plantings of *Coleworts*; make two or three sowings of the most favourite varieties of *Cabbage* between the present time and the 12th of August; and a sowing of the *Early Horn Carrot* may also be made for obtaining young *Carrots* in autumn. Plant in succession *Cauliflowers* and *Celery*. Apply liberal soaking of water, and see that the *Early Celery* is free from suckers; if not, clear it of all side and spurious shoots; take, also, particular care in earthing that no earth is allowed to run into the hearts, and that the outside leaves are kept erect. Sow *Chervil*, *American*, and *Normandy Cress*. Continue to sow common *Cress* and *Mustard* in shady situations, as well as *Radishes* in variety. Sow *Endive* in full crop. Gather *Chamomile*-flowers, *Marigold*-flowers, *Marjoram*, and all kinds of pot and other herbs for drying. Plant out *Leeks* in succession, as well as *Lettuce*, and sow again; and get the *Winter Spinach* ground well worked and pulverized.

The autumn sown *Onions* will now be ready for storing, and the ground should be again cropped with *Cape Brocoli*, *Cauliflowers*, or *Coleworts*. Sow *Parsley* again; and make the last sowing of some early variety of *Pea* for this season. Sow *Rampions*, and continue to sow *Turnips*, maintaining a loose surface about those already thinned.

Mushroom-beds, prepare for, and make in succession, taking care to work amongst the materials a portion of good holding loam to moderate its fermenting qualities.

JAMES BARNES.

MISCELLANEOUS INFORMATION.

OUR VILLAGERS.

By the Authoress of "My Flowers," &c.

THERE is an interest and charm in the "short and simple annals of the poor," that is almost unaccountable. It cannot be that human nature is more pleasing in one class than another. The mould in which all are cast is the same; it is only the painting and glazing (to use a homely figure) that makes the outward difference. And yet I know not how it is, but the joys and sorrows of the cottager not only take extraordinary hold upon our feelings, but they read better in print than those of the rich and educated. I have puzzled myself continually to understand this, and I can only come to the conclusion, that it has pleased Him, in whose hands are the wills and affections of men, so to order it, for mutual edification, that the poor may possess an interest in the minds of their richer brethren; and that the rich may take delight in the duty assigned to them of "remembering the poor."

There is a little cottage in our village that we always look at with much pleasure. It is rented by a poor labourer, who was born in the parish, and has lived in this little close, inconvenient hut, for it is little else, for more than twenty years. He is now an old man, but he possesses that which will survive when he is gathered to his fathers—an irreproachable character. He has been, without one exception, the best husband in the parish; he has steady and respectable children, married, and, with one only exception, doing well; and it is fair that such a character, a cottage gardener too, should be sketched in the pages of a work so extensively read among all classes.

The little cottage in which James L—— and his wife lived much beyond twenty years, stands in a line of straggling houses, just out of the principal street, without a morsel of garden, except a little place, about two yards square, in front of the door, where not even a weed could find an opportunity to grow. A poor, ragged, fruitless vine hangs against the wall, and just fringes the little easement

with its leaves, beautiful even in their neglected wildness, but this is all; and little can be seen from the cottage, beyond the road that passes the wicket, and the hedge that bounds it on the other side.

Yet for nearly twenty years did James L——'s wife lie a helpless cripple in that little kitchen. Her bed was placed just under the window, so that she could sometimes be moved to see what was passing by. She could observe the first silky buds of spring adorning the rugged stems of the vine, and watch the putting forth of the leaves when the summer drew near; and she could see the delicate green of the quickset hedge, deepening as its foliage thickened. She could see the clouds advancing from the hills, and the bow that speaks so loudly to the heart of man sometimes glittering among them. She could see, too, the bright and terrible flashes that broke through the darkness of the night-storm, for she had only a thin and scanty curtain to the casement; and the thunder-peals shook the crazy tenement, as she lay helplessly on the bed of suffering.

Betty L—— was a woman of strong and violent temper, and the long, wearisome confinement she endured, with incessant rheumatic pain racking her limbs, increased instead of subduing her natural irritability. Her violence and impatience were so great, that her neighbours were quite worn out. With the invariable kindness of the poor in cases of sickness, one or other would do all they could to assist her patient, feeling husband, by night as well as by day; but month after month, and year after year, tried their good-nature sorely, and they dropped off one by one, until poor James could with difficulty find any one to help him to turn her aching limbs.

The devotedness of this man to his violent wife became almost a proverb in the village. He was hard-working, patient, and faultless in kindness and good temper. His work lay at some distance from home, but he never missed

coming back at dinner-time to turn his wife, and give her food. In the evening, as soon as he had waited upon her again, down he went to the allotments, where he worked on his land until dark. Several times in the night he had to rise, to alter the poor sufferer's position, and sometimes he had to call up a distant neighbour to assist him. It was no easy task to place a very heavy person in an easy posture, when every limb quivered with pain; and the neighbours have said that sometimes poor James has seized his hair with both hands, in distraction, at not being able to make his violent wife easy and quiet. At day-break, in the long days, he was off again to the allotments, before his regular work began; and in this way he laboured uncomplainingly during the whole of his wife's illness. No expression of impatience or vexation ever escaped him, although he has dropped asleep while waiting by her bedside; and the anger, violence, and impatience he had to endure, never were known to extort one word or look of irritation in return. His health, however, began to fail—his strength gave way from having to lift a heavy, helpless weight so continually; and his great fear, as far as he dared fear anything, was that he might be taken away first, and his wife left to the care of others. But James L——'s trust was placed on the Rock of Ages. He was an illiterate man—he could not read; but many of God's children know not their letters, and when He vouchsafes to teach, no alphabet is wanted. James L—— learned his lessons of wisdom by the ear, but his knowledge of Scripture was deep and full; and in keeping God's commandments, he put to shame many a man "with a gold ring in goodly apparel."

It seemed that Betty L——'s afflictions were intended, by a merciful God, as stripes to subdue her ungovernable spirit. For years and years, the more she suffered the more petulant she grew; but, at length, the lion was tamed; He who is mightier than man prevailed; and her daughter, who had for some time lived in the cottage also, with her family, assured us, that her mother's gentleness and meekness was remarkable for a short period previous to her death.

Poor James was, perhaps, the only living being who could regret the departed. Her children, knowing her sufferings, rejoiced to see them ended; for she had known the "truth" for years, and they humbly hoped she had felt its power before she died; but her husband seemed like one who had lost his all, for a long time after her death. His health is now much restored, and he remains a living instance of a faithful and faultless husband. May his example strike and influence others, who perhaps have gentle wives, and yet are not like him.

No epitaph will record the domestic virtues of James L——, but he will not readily be forgotten in his native village; and the couplet that now inappropriately distinguishes the grave-stone of a man who drank himself to death, might, with truth, be placed to mark his future resting-place:—

"The sweet remembrance of the just,
Shall flourish when he sleeps in dust."

PRESERVING.

THE following rules and receipts for preserving fruit may be of service to some of the readers of THE COTTAGE GARDENER; and they have this as a recommendation, that they have been used by me for several years; and I have just finished my last pot of strawberry jam made in 1849, and found it as good as when first made.

Strawberries, raspberries, currants (red and white), cherries, plums of all sorts, apples and pears, may be preserved as follows:—Gather the fruit about the time the sun is setting, it is then sweetest; and let it not only be dry, but kept till used in a dry place—use the fruit as soon as possible after gathering. Prepare a gallon of fruit for preserving; put it in unglazed jars or pans that can be covered over, and place it in a cool oven in the evening, to remain all night; or stand them in boiling water till quite dressed. Put the fruit in a preserving pan, and strew over it, when boiling, 2 lbs. of good lump sugar, broken small by being put into a bag or cloth and well beaten by a hammer, &c. Do not stir the mass for some minutes, but let the sugar melt gradually; then, in stirring, keep the spoon close to

the edge of the pan, and move the whole of its contents round bodily; if these directions be observed, preserves will not burn even when very thick. To say how long each preserve should boil is scarcely possible, as the season, state of fruit, and quality of sugar, all combine in producing that state in which the juice of the fruit forms a jelly; but the criterion with me is to place a portion on a plate, incline it on one side, and if the preserve remains fixed, or moves very slowly, it is done. If any scum arises remove it, but I have scarcely any. Have the preserving pots very clean, and if hot all the better; it prevents the candying of preserves. Fill the pots nearly to the top, as their contents always shrink. The following day cut some tissue papers rather larger than each pot, and dip them in some good salad oil, and apply them closely over each pot, taking especial care that the paper fits the sides of the pot exactly. Take a piece of the same sort of paper, press it on the top of the pot, and cut a border about half-an-inch wide all round; spread some thin paste over the border, place it on the pot, and, putting a soft cloth over, gently press it down. When dry, dip a soft brush or rag in a little oil, and spread a very small quantity all over the paper. When done in this way the state of the preserves may always be seen, as the cover is transparent. I prefer gently rubbing on the oil with a clean finger. Make some neat labels, write on each the name of the preserve, and date, and place them in any airy place secure from damp, but never put them in cupboards. I find a shelf over an upper flight of stairs is the best place with me.

Rhubarb stalks, black currants, gooseberries, and quinces require 3 lbs. of sugar to the gallon, but in every other respect the above directions should be followed. Plums are scalded and skinned.

BLACK CURRANT ROB, for sore throats, &c.—Pick one gallon of berries from their stalks, bake them in a very slow oven till they are most thoroughly done, then add 1 lb. of lump sugar beaten very small, mix with it 1 oz. of powdered gum arabic, and stir the whole together while very hot; put it in a preserving pan, and boil it till it is very thick indeed; take some large dishes, put the least quantity of oil or fresh butter all over them, and spread out the rob as evenly as possible about as thick as a five-shilling piece; dry it, either in the sun or before the fire, cut it in any form you like, and turn the pieces till dry. I have some made twelve months since perfectly good. Keep it in a dry place. If a less quantity be required, the proportion is $\frac{1}{4}$ lb. sugar to 1 lb. fruit. The gum may be omitted, but is very useful.

A NICE GRAVY, to use with Vegetable Marrow, &c.—Take $\frac{1}{2}$ lb. of shin of beef, cut it in slices as thin as possible; put it in about a quart of water the day before using. The next day, directly after breakfast, peel and cut some carrots and onions in slices, and set on the whole with an additional pint of water. Place the saucepan on the hob, and if it is an hour before it boils so much the better, but do not skim it; keep it simmering till twelve, and then put in any herbs you may like, seasoning, and as much flour as will thicken it to your liking. When wanted, strain.—S. C.

PEACH LEAVES BLISTERING.

THIS spring my peaches and nectarines, especially the latter, have some of them been severely attacked by the leaf-bliſter. The cause to which I have ascribed this diseased state of foliage, is a sudden vicissitude of temperature, the succession of bright and sunny days to frosty nights, and the only remedy I think likely to be successful is sheltering the trees by a canvass covering, combined with careful stopping and maturing of the wood. You recommend the reduction of the humidity of the soil as an effectual preventive; this (whatever virtue it may have in some cases) has, in mine, proved utterly powerless. I am anxious to call the attention of professional and practical gardeners to this subject; which has not yet received the consideration its importance deserves. I hope to see a scientific and sound discussion upon it in your pages.

Everything that has met my observation since I last applied for your opinion has strengthened the theory I then entertained. I have noticed that the trees which suffer most are those which have been previously attacked; doubtless, because the roots have been so weakened that they

have been unable properly to ripen and harden the young wood. This is, in consequence, full of crude unelaborated sap, which is peculiarly liable to expand when suddenly acted on by heat, and thus bursts the vessels containing it.

Every case has occurred on a south wall, on which, of course, the alternations of heat and cold are more violent. The trees on east and west walls have altogether escaped. Surely it is impossible to resist the inference to be drawn from this fact.

Again, I am informed by gardeners who have lived in the northern counties, that this disease is unknown there; that they never saw it till they came to the south. If this is really the case, the cause seems to be that the trees do not come into leaf there till the season of danger is past; possibly, also, that gardeners are compelled there to pay greater attention to the ripening of the wood, and that the practice of retarding and sheltering is more general. I have never known a season in which the blister has been more prevalent than the spring of this year; yet Mr. Errington spoke of its not having made its appearance in Cheshire. This immunity, although, doubtless, due partly to the previous careful treatment of the trees, may be, in some measure, owing to the locality also.

But pray invite to this point the attention of those better able to investigate, and to elicit first principles from facts (which is the true science of horticulture), than an amateur of limited experience.—REV. ROBERT BLACKBURN, *Selham Rectory, Petworth.*

RHUBARB WINE.

I AM reminded by the season of a promise I made to your readers in page 320, vol. 4, viz., that I would make inquiries respecting a cheap sacchorometer. I have now much satisfaction in informing you that a very efficient little instrument can be obtained for six shillings, packed in a neat tin case, for safety, at small additional cost. It is called Roberts' Sacchorometer, and may be obtained through Messrs. Black and Co., Edinburgh; or Messrs. Whittaker, London, Publishers.

In using this sacchorometer, two things are necessary to be observed:—1st. The temperature of the liquor to be examined must be 60°; and 2nd, the division on the scale must be multiplied by 5 to obtain the correct specific gravity. For instance, should the must raise the instrument to 24°, as marked on the scale, multiply 24 by 5, and you will prove the gravity to be 120; about the proper gravity of the must, before fermentation begins.

This is a very good season to make the wine, and with this instrument, by following the directions in my former papers, an excellent effervescent wine may be expected with certainty.

I cannot conclude without noticing, and recommending to the perusal of all interested in home wine making, a most useful little book on the subject, "Roberts' British Wine Maker." Since my former letters, I have seen this work (the fifth edition), which has a supplement upon the rhubarb plant, as a material for wine making. It gives me great satisfaction to find that Mr. Roberts, who seems to have great practical experience in wine making, coincides altogether with me in considering that rhubarb is very little inferior to the grape, and superior to most other English fruits for that purpose.—HENRY W. LIVETT, *Wells, Somerset.*

TO CORRESPONDENTS.

*** We request that no one will write to the departmental writers of THE COTTAGE GARDENER. It gives them unjustifiable trouble and expense. All communications should be addressed "To the Editor of The Cottage Gardener, 2, Amen Corner, Paternoster Row, London."

NIGHT VIOLET, OR JULIAN FLOWER (H. A. P.).—We do not know a plant thus called. Can you send us a specimen? Perhaps it is the Night-smelling Rocket, *Hesperis tristis*, which in Johnson's edition of Gerard's Herbal is classed with the Violets as *Viola matronalis flore obsoleto*.

ADDLED EGGS (*Disappointed Poultry-keeper*).—Only five chickens out of fifty, eggs would arise from too many eggs being placed under each hen; from nine to eleven are the largest numbers we prefer under moderate-sized hens. The barrenness may, however, have arisen from other causes. When the cock is a year older, and he has more than two

mates, you may find the eggs more prolific. "A great deal of white on the breast, tail, and wings," of your Spanish chickens is a sure sign that on the side of one of the parents the breed is not pure. Wait, however, until the chickens have moulted before you are determined upon this point.

SEEDLING PELARGONIUM (J. E. H.).—All seedlings of this flower differ from the parent. Your seedling has no merit as far as we could make out. All the petals were shed.

COMMON LAURELS (J. S.).—The usual rate of growth of the common Laurel, in good soil, is about twelve feet in ten years; and twenty feet high is the utmost of their growth, with few exceptions. Laurels for shelter grow as fast as any evergreen, and they are the best for a screen.

LAURUSTINUS (*Ibid.*).—The growth of the Laurustinus is very much affected by the nature of the soil. We have seen it rise on clay soil only three feet in ten years, and killed to the ground twice by the frost in that time. Ten years since we planted one a foot high, on barren sand over a chalk bottom. It is now nine feet high, and as many in diameter. On this soil the frost has not hurt a leaf of the Laurustinus for the last twenty-two years.

VARIOUS QUERIES (*A New Subscriber*).—The box filled with bark in a greenhouse is objectionable, not because of the heat it would afford, but because the damp arising from it in winter would cause the leaves of Pelargoniums, and other greenhouse plants, to turn yellow and drop off. Vines in a greenhouse do no harm, provided you do not force them. Black Hamburg and White Muscadine are the most suitable kinds. We cannot answer your question about Guano. Try the London Manure Company. The size of pot for Pelargoniums and Fuchsias depends entirely upon the size you wish to grow your plants to. For a middling-sized plant a six-inch pot will be sufficient. *Lilium lancifolium* in pots should have some very rotten dung laid upon the soil, for the roots to strike into. A watering with weak liquid manure will be useful. Sheep's dung makes the best, but be careful that it is not too strong. By *Arum* we presume you mean the *Calla*. Rub off the suckers constantly as they appear, and do not over-pot your plants; give considerably less water in winter, to give them a rest, and they will flower next year. *Guernsey Lilies* have not yet arrived, and therefore it is not too late to plant them when they do arrive. They rarely flower the second year.

LATE-STUCK DAHLIAS (*A Great Admirer*).—You may allow them to flower if you like, but they will be small and useless as show flowers. The best way to keep such is to allow them to remain in the pots, and when the frost turns them black, cut off the tops to within two inches of the pot, and lay them on one side in a dry place where the frost cannot reach them. We fear if left in the frame, and covered up with straw, they would perish from damp.

CUTTING LAURELS AND HOLLIES (*Ibid.*).—You ask what is the best time to clip these, and we answer—*Never*. Clipping is a barbarous operation, because the leaves will be cut in pieces as well as the branches. If it is necessary to keep them in form, or in some required space, use the knife, not the shears; indeed, we would banish the shears altogether from the garden, excepting to clip the edges of the lawn, or the dwarf box in the kitchen-garden.

NAKED LAURELS (*Ibid.*).—Your Laurels that have been planted to cover a wall have become naked at the bottom, the reason for which has been very clearly shown, at page 226 of this volume, by Mr. Beaton. Read his paper attentively, and you will see why your lower branches have died off. To remedy this, plant some Laurels or Privets next month at such a distance as to prevent the drip from the high branches falling upon them. If the soil is dry, puddle the soil at the time of planting; you might also try a few box trees to hide the naked wall. The best time to cut down Laurels or Hollies is just before the sap begins to rise, which generally happens about March. Send your address, and we will forward it to our correspondent.

MOVING ROSES IN AUGUST (J. T.).—Several years ago we removed rose-trees in August with perfect success; and you may do the same by adopting the same plan. Dig a trench round each tree at two feet distance, and gradually approach the tree, carefully preserving every root-fibre. Dig out the hole where the tree is to be planted, and make a puddle at the bottom by mixing some fine earth with water till it is about the consistence of pudding-batter; then plant the tree in it, and fill in portions of earth, mixing it also with water till the hole is filled up level; then cover the surface with moss, to prevent evaporation. Every evening syringe the trees freely. You will find they will soon recover the removal, and probably put forth new leaves in the autumn. Stake the trees securely to prevent the winds from blowing them about.

BEES (E. S. H.).—It is better to use the straw cover sent with Neighbour's improved cottage hives, only for the purpose of covering glasses. During the winter months a large milk-pan forms an excellent cover for them. The season, generally, is not a good one; therefore, you must be in a very favourable locality. So large a quantity of honey collected in so short a time as you mention (17 lbs. in ten days) is not usual. The bees do not go up into the glass placed upon your swarm because the population of your house is not large enough; still you did right in putting on the glass. In your locality you may put a super on in July; but not after July.

LIST OF ROSES (J. W. M. F.).—The following are all excellent Roses, and with proper care and manuring will grow in your light soil:—*Hybrid Perpetuals*.—Du Roi, Mogador, Augustin Mouchelet, Baronne Prevost, Baronne Halex, Clementine Seringe, Dr. Arnal, Dr. Marx, Duchesse de Galliera, Duchesse de Montpensier, Duchess of Sutherland, Etendard de Marengo, General Cavaignac, General Negra, Jacque Lafitte, Joan of Arc, La Reine, Lady Alice Peel, Louis Bonaparte, Madame Laffay, Mrs. Elliott, Reine des Fleurs, Soleil d'Austerlitz, Naomi, Leonore d'Este, Chereau, Wm. Jesse, Geant des Batailles. *Bourbons*.—Accidalie, Aurore du Guide, Comte de Rambuteau, Coup d'Hebe, George Cuvier, Dupetit Thouar, M^{me}. Angelina, M^{me}. Nerard, Queen, Souchet, Souvenir de Malmaison.

BEES (*A Farmer and Grazier*).—Remove your bees from the slab, give them a board in its stead; let your bees remain as they are, and cut down the hive, as you propose, in the spring. When they swarm, put the

swarm into Nutt's hive. Buy "Payne's Bee-keeper's Guide;" it is well suited for a person quite unacquainted with the arrangement.

THE RANTING WIDOW.—*Queen Mab* very kindly has written to us the following:—"On turning over the leaves of the last volume of *THE COTTAGE GARDENER* I one day noticed an inquiry from a correspondent, T. B. P., (in No. 109), as to what plant it is which is known by the designation of "The Ranting Widow." It is the *Epilobium Angustifolium*, which may often be seen in cottage gardens, and grows wild in the Forest of Dean. It is one of the handsomest of our English flowers; six or seven feet high, and bearing an abundance of bright pink flowers, which, as you will see, answers to the description of the plant seen by T. B. P."

MIGNONETTE (B. B.)—This growing on your asparagus-bed will be killed by the application of salt. Cut down the *Melilotus* when it has done flowering, if you do not require seed. Thanks for the tulip-bulbs; we fear, from the appearance of the flower-stem, that it is an accidental monstrosity, and will not be a habit inherited by its off-sets; but we will try them.

STRAWBERRIES (I. S.)—It will be of little use to try these so far north on "poor and strong soil." Make it more open by the mixture of lime rubbish and dung; and plant it with Keen's seedlings.

DISTORTED DAHLIAS (R. P. Hamilton)—When young, the tops, we think, must have been slug-eaten, or frosted. The cuckoo spit insect had nothing to do with it; but it is not at all improbable that the cold nights, which occurred just at the time of the appearance of that insect, may have done the mischief. What you consider "eaten away" is an ulceration of the tissue of the leaf. We think if you mulch over the roots, and shelter at night in early spring, your Dahlias next year will not present this appearance.

SOLFATARE ROSE (P. V. M. F.)—There is no doubt that this is a tender tea-scented variety that will not succeed as a standard on the Worcestershire hills; and, indeed, you will not find that we ever recommended it to be grown as a standard anywhere. As you have budded it for a standard, its shoots are strong, and you are in a warmer district of England, why not try it as a weeping rose, and train it all round *en Quenouille*?

HONEY-DEW.—The same correspondent says—"Permit me to mention that about ten days ago I was passing under a beech-tree, when, hearing a loud buzzing over head, my attention was at once arrested. On looking up I saw some forty or fifty *humble-bees* hovering about the leaves (the time, 7½ o'clock, P.M.; the weather very sultry) attracted by the glutinous excretion of the aphides (?), which was very abundant on the leaves. I did not observe any of them actually settle or suck the dew, but I have very little doubt they did so. Of the hive-bee, I saw not an individual; but it was getting late."

RHODODENDRONS (Queen Mab)—These, you say, "look more and more unhappy every year;" and so they will in your "very burning situation" on a gravelly subsoil, unless you come to the rescue by preserving more moisture to their roots. The sandy peaty soil in which they were planted is all right, but you must cover the surface thickly with moss, and give their roots a good soaking of water three times a week in dry weather from May until August, but not over the leaves.

HEARTSEASE (C—P)—It was completely shrivelled up. 'How often have we said flowers must be sent in a box of damp, not wet, moss.

FUCHSIA-BUDS DROPPING (C. C.)—See what is said at p. 184. To obtain Fuchsia-seed you have only to crush the berries when quite black and ripe, and to wash the pulp from the seed; dry it, and sow it next March.

GERANIUMS BEDDED-OUT (Jones)—As these do not seem to grow, we fear you turned them out too suddenly, without gradually accustoming them to the open air. If so, they will not recover it until late in the season. Cover the surface over their roots with moss, and keep the roots watered every evening in dry weather.

STRAWBERRIES FOR FORCING (Garden)—See page 247. Gas with proper regulation can be employed for heating the air of a stove. Such a small house as you mention could be built for £10, even if you employed workmen. You will see an account of the gas apparatus we employ at page 312 of our last volume.

PERMANENT PASTURE (F. Procter)—By all means sow the grass seeds immediately after the wheat is sown, and as early in the autumn as you can. September would be better than October.

ARTIFICIAL FLOWERS (F. P.)—You may readily obtain instructions in the art of wax-flower making, for now there are many teachers; but the making of the talc flowers, as shewn at the Great Exhibition, is, we believe, a secret. Artificial-flower making is by no means so modern an art as you seem to consider, for in the *Talmud*, or *Gemara*, is this legend:—"As Solomon sat surrounded by his court, at the foot of the throne stood the inquisitive Queen Sheba; in each hand she held a wreath of flowers, the one composed of natural, the other of artificial flowers. Art, in the labour of the mimic wreath, had exquisitely emulated the lively hues and the variegated beauties of nature, so that, at the distance it was held by the queen for the inspection of the king, it was deemed impossible for him to decide, as her question imported, which wreath was the natural, and which the artificial. The sagacious Solomon seemed quite posed. Yet to be vanquished, though in a trifle, by a trifling woman, much irritated his pride: the son of David—he who had written treatises on the vegetable productions, 'from the cedar to the hyssop'—to acknowledge himself outwitted by a woman! with shreds of paper and glazed paintings! The honour of the monarch's reputation for divine sagacity seemed diminished; and the whole Jewish court looked solemn and melancholy. At length an expedient presented itself to the king, and it must be confessed, worthy of the great natural philosopher. Observing a cluster of bees hovering about a window, he commanded that it should be opened; it was immediately opened, the bees rushed into the court, and immediately alighted on one of the wreaths, while not a single one fixed on the other. The decision was not then difficult; the learned rabbins shook their beards in rapture, and the baffled Sheba had one more reason to be astonished at the wisdom of Solomon. This would make a pretty poetical tale. It would yield an elegant description and a pleasing moral—that the bee only rests on the natural beauties, and never fixes on the painted flowers, however inimicably the colours may be laid on. This, applied to the ladies, would give it pungency." (*D'Israeli's Curiosities of Literature*.)

THE BEST PROVISION FOR GRAVY.—This is from a correspondent:—"Dip an ox's liver in water when it comes from the butcher's, and take it out immediately; mix 1 lb. of coarse brown sugar with ½ lb. of common salt, and rub it daily with this for a week or ten days, according to the size of the liver; then take 3 oz. of saltpetre, and 1 lb. of common salt; boil it to a brine, with sufficient water to cover the liver. Let the liver lie in it six weeks, and then hang it up in your kitchen like bacon. The size of a man's finger, cut into very thin shavings, is sufficient to put to a pint of water. Let it boil half-an-hour, and then strain it off. This is an excellent gravy for poultry and game; no salt nor pepper should be added, as it will destroy the flavour. A bone of meat to a piece of the liver, makes a good soup; it is also very useful to stew with vegetables, when no meat for stock is at hand.

NAMES OF PLANTS (M. and T.)—The fleshy leaf, we think, is that of *Crassula orbicularis*, and the little fragrant plant only some variety of the Wild Thyme (*Thymus vulgaris*) grown in the shade; but we will plant this, and tell you more about it. (*Osmond's Ash*).—Your hardy shrub is *Deutzia scabra*; it is well worth cultivating. Cut out the flowering shoots as soon as the flowering is over.

CAPE SHRUBS FROM SEED (O. Y.)—You will find more said about them to-day by Mr. Fish.

KALMIA GLAUCA (M. H.)—This is, seemingly, dying, as it is putting out only a stunted leaf at the points. Probably from flowering so early in spring it had been forced freely, and then turned out to the cold when the flowers were fading. We fear it is gone or going past redemption, as you say it has always been well watered, and that the drainage is good. Do not saturate the soil with water now; but keep it in a shady place. Sandy loam suits it best. *Kalmia latifolia* requires similar treatment.

PORTABLE GREENHOUSE (An Old Subscriber)—Will think over it until next week.

SPONGE CAKE (L. B.)—Take a pound of loaf sugar, finely pounded, and beat it with 1 lb. of new eggs twenty minutes, leaving out three of the whites. Then gently mix in ¾ lb. of flour, and bake it immediately in a brisk oven. A few drops of essence of lemon or almond is a great improvement.

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Advertisements.

BOTANICAL AND GARDENING PERIODICALS.

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WEEKLY CALENDAR.

M D	W D	JULY 31—AUGUST 6, 1851.	WEATHER NEAR LONDON IN 1850.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bef. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in In.						
31	Th	Sunflower blooms.	30.144—30.106	78—62	W.	01	23 a. 4	49 a. 7	9 39	3	6 6	212
1	F	Lammas Day.	30.171—30.119	70—57	E.	—	24	48	10 a 4	4	6 3	213
2	S	Swallow-tailed Butterfly seen.	30.096—30.028	69—55	S.W.	—	26	46	10 28	5	6 0	214
3	SUN	7 SUNDAY AFTER TRINITY.	30.046—29.980	79—53	E.	—	28	44	10 50	6	5 56	215
4	M	Yellow Succory flowers.	29.941—29.812	77—52	S.W.	—	29	43	11 16	7	5 51	216
5	Tu	Canterbury Bell flowers.	29.750—29.659	82—56	S.W.	0.02	31	41	11 45	8	5 46	217
6	W	PR. ALF. B. 1844. Transfiguration.	29.733—29.722	74—49	N.E.	—	32	39	morn.	9	5 40	218

ON that great and awful day in which all who are in their graves shall come forth, we have a just hope that there will be a goodly brotherhood of the martyrs of science, on whom "the white robes" will then be bestowed. It is not for man to know the secrets of all hearts, but judging, according to man's judgment, we know of no band of martyrs, except those "slain for the word of God," more worthy of reward than those who have died in the effort to increase the knowledge, and the innocent happiness of their fellow men. We have thought again and again over the list of those who fell sacrificed to that effort, and we have detected not one, over whom we should not have mourned, had he been our brother, without even a shade of shame, or of anxiety. It would have been wondrous if it were otherwise, for well do we know, despite some melancholy exceptions, that "they who cry after knowledge, and lift up their voice for understanding, who seek her as silver, and search for her as for hid treasures, shall understand the fear of the Lord, and find the knowledge of God." Such has been the characteristic of all those we have known, and of whom it could be said—

'Twas thine own genius gave the fatal blow,
And helped to plant the wound that laid thee low.

Nor was DAVID DOUGLAS, whose memoir we are about to place before our readers, an exception. Mr. Fish, in a letter just received by us, says:—"I was less or more acquainted with, and greatly esteemed all the branches of the Douglas family—but *David* I only saw once. I think it was during his two years stay in England, before he started for his last and fatal expedition. At that time he visited his friends in Old Scone, Perthshire, between whose dwelling and my father's house, there was only the breadth of the highway, passing from Perth to Blair Gowrie. The two families were always friendly, though, scattered as we are, communications have been greatly stopped of late. At that time I was an apprentice under Mr. Beattie, gardener to Earl Mansfield, at Scone Palace, and my comparative ignorance prevented me appreciating with zest Mr. Douglas's conversation, as at a later period I should have done. At that time he was suffering considerably in his eyes, and very likely was more reserved in consequence. David had been an apprentice at Scone some years before me, and I followed him at the same interval of time to Valley Field, the seat of Sir Robert Preston.

David Douglas was born at Old Scone, then *Scone*, in Perthshire, sometime in 1798. His father, John Douglas, was a working stone mason, who was somewhat reserved and dignified in his manners, but possessed of great general, and a fair portion of scientific information, united to great kindness of heart, and an unblemished moral reputation. From his superior acquirements, he performed the most of the statuary for the village church-yards, and was sent for, far and near, by the gentry, for setting kitchen ranges, and curing smoky chimneys. It was always considered that Mr. Douglas was not worldly-wise enough to turn these employments to his pecuniary advantage, by charging much above his usual wages; yet, like many other Scotch parents, from his somewhat limited income, he contrived, by self-sacrifice, to give a good education to his family of three sons and three daughters. Of the latter, one was dead before I knew them, and of the sons, John, the eldest, after learning with his father, was clerk sometime to Mr. Atkinson, the eminent architect, and has now been employed for a number of years by the Duke of Buccleugh, at Drumlanrig Castle. George, the youngest of the family, and a school-fellow of mine, at the parish school of New Scone, was apprenticed to a merchant in Perth, and is now, I believe, engaged in mercantile pursuits at Liverpool.

David received part of his education in Scone, and part at the parish school in Kinnoul, a parish some two miles off, the pedagogue in which, about that time, and for years after, received a high character as an inflexible disciplinarian. Some act of self-willed determination, approaching to obstinacy, I have understood was the reason why David was moved from Scone to Kinnoul. Even there his contempt of the school-master's thong, and his carelessness about those difficulties and hardships which would have weighed hard with other boys, were budding into that strong-minded, self-dependant heroism, which enabled him afterwards to dare and do so much for the advantage of natural history. At an early period of his youthhood he was received into Scone Gardens, under the late Mr. Beattie, whose friendship he secured by his attention and good conduct. At this period he spent his spare time in botanical rambles in the neighbourhood, and in reading such books as he could get or borrow among his friends and acquaintances; for there were no village libraries and no cheap publications then. Among others, he was very intimate with a second foreman in the forest department, who had once seen better days—his last gradation being from the excise into the woods. The chief bond between them was the possession, by Mr. Scott, of some good books, chiefly on history. One evening, David, in returning some books, begged to obtain "the oldest farthest back he had got," and the old man quietly slipped a well-thumbed Bible into his hand. The old gauger used to tell the tale, "when the wee drap was in," with great gusto. It shows that then the young mind of David was especially thirsting after knowledge. It is supposed that about this time the first desire to travel might be aroused in his mind, as it is likely he would often see the celebrated botanists, Robert and James Brown, then of the Perth nursery, who were on intimate terms with Mr. Beattie, and who were not above speaking of their excursions to some of the most intelligent of the men. About the year 1818, David removed to Valley Field, the seat of

Sir Robert Preston, Bart., under the late Mr. Stewart, where he remained the best part of two years, receiving books to read, and many marks of friendship from Mr. Stewart, as a reward for his attention. I have heard Mr. Stewart speak of him in the highest terms, and never in the least depreciatingly; for it was not "satire in disguise," when he once said that "Douglas was so enthusiastic that he would see more in anything he took to than what the generality of people could perceive." From Valley Field, David removed to the Botanic Garden at Glasgow, where he attracted the attention of Sir William Hooker, and accompanied him in his excursion through the Western Highlands, in search of materials for his *Flora Scotica*. While in the gardens, I have been told he once rushed into the lecture room just in his shirt and trousers, as he was working, with what he considered a new and rare plant for Sir William to look at. It was while returning on a visit home, after this excursion to the Highlands, that he somewhat discomposed his parents sense of propriety. He arrived at home on a Sunday, when all the family were at church, and following them thither, the first sight the father got of his son was seeing him sitting with his arms spread out on the book-board before him, and holes—not small, but great ones—in the elbows of his coat. The sedate stonemason felt as if every eye was upon him and his son; but as for David, it is not likely he ever thought of his coat, or the holes in it either. By Dr. Hooker, David was recommended to the London Horticultural Society, then under the secretaryship of Mr. Sabine, who sent him out as a botanical collector to the United States in 1823. In 1824 he went to California, calling at Rio Janeiro, and Juan Fernandez, and sent home a vast quantity of seeds and specimens, passing through the Rocky Mountains to Hudson's Bay, and returning in 1827. At Juan Fernandez he sowed many garden seeds, because, he said, "I wished to add to the collection of a second Robinson Crusoe, should one appear." At Hudson's Bay he met with Sir John Franklin, Dr. Richardson, and Sir George Back, returning from their second overland arctic expedition, and with them he came back to England. His stores were duly appreciated; and the Linnæan, Geological, and Zoological Societies did honour to themselves, as well as to him, by electing him to gratuitous Fellowships. After continuing two years in England, he sailed in the autumn of 1829 for Columbia, and, continuing his favourite pursuits, visited the Sandwich Islands, and there was gored to death in a pit by a wild bull, July 12, 1834, in the 36th year of his age. The circumstances are thus detailed by the Englishman last in his company:—

"On the 12th instant, about ten minutes before six o'clock in the morning, Mr. Douglas arrived at my house on the mountain, and wished me to point out the road to Hilo, and to accompany him a short distance. Mr. Douglas was then alone, but said that his man had given out the day before; referring, probably, to John, Mr. Diell's coloured man. Having taken breakfast, I accompanied Mr. Douglas about three quarters of a mile; and, after directing him in the path, and warning him of the traps, proceeded about half a mile further with him. Mr. Douglas then dismissed me, after expressing his anxiety to reach Hilo by evening, thinking that he could find out the way himself. Just before I left him, I warned him particularly of three bullock-traps, about two miles-and-a-half a-head; two of them directly on the road, the other on one side. I returned home to skin some bullocks which I had previously killed. About eleven o'clock, two natives came in pursuit of me, saying that the European was dead, and that they had found him in the pit in which the bullock was. They stated that, as they were coming up to this pit, one of them, observing some of the clothing on the side, exclaimed "*Lole!*" and, in a moment afterwards, discovered Mr. Douglas within the pit, trampled under the feet of the bullock. I accordingly ran to the house for a musket and ball. On reaching the pit, I found Mr. Douglas lying upon his right side, and the bullock standing upon his body. I shot the animal, descended into the pit, drew the carcass to the other end of it, and got out the body. His cane was with him, but the bundle and dog were missing. Knowing that he had a bundle, I asked for it. After a few moments' search, a loud barking was heard a short distance a-head, on the road leading to Hilo; and, on reaching the spot, the dog was found with the bundle. On further examination, it appeared that Mr. Douglas had stopped for a moment and looked into an empty pit, and also into that wherein the bullock was taken; that, after passing on up the hill some fifteen fathoms, he laid down his bundle, and returned to the fatal pit; and that, while looking in, by making a misstep, or by some other means, he fell into the power of the infuriated animal, who speedily executed the work of death."

Before Mr. Douglas's visit to Scone, I had assisted in conveying the remains of his worthy father to his last home. Many a pleasant hour I have spent with his widow and her amiable daughters. When, more than twelve years ago, I visited my friends, the mother was also gone, and there was something heart-choking in seeing the two daughters alone. When I visited the same scene a short time since, the house was inhabited by strangers, the two sisters generally living now with the brothers; yet, its old walls had an indelible interest to me. I went to the village church-yard in New Scone, and surveyed the monument raised to his memory by the *botanists of Europe*; the companion with me bit his lip, and sneered at *botanists of Europe*. It was once intended to have had the monument in the centre of ground containing all the plants he introduced, but the money was not forthcoming. The monument is, however, very tasteful and handsome. Faults Mr. Douglas may have had—for humanity in its best form is not free from them, but

whatever they were, his friends and relations saw them not. Well might they love him sincerely—for in every respect, in his palmiest days, in his attentions and kindnesses as a son and a brother, he might be equalled, but he could not be excelled."

We have not space sufficient to specify even all the hardy plants, for which we are indebted to him; but we may remark, that the beautifully-flowering Currants, Clarkias, Enotheras, Lupines, Penstemons, and many of our Pines, are among the number. The aggregate amount of his disco-

veries are—53 woody plants, and 145 herbaceous; and his dried specimens of Californian plants alone, amounted to about 800 species.

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-four years, the average highest and lowest temperatures of these days are 74.4°, and 52° respectively. The greatest heat, 92°, occurred on the 1st in 1846, and the lowest cold, 36°, on the 6th in 1833. During the period 88 days were fine, and on 80 rain fell.

BEFORE us is collected again an array of volumes claiming our notice, and many of them have had their claim neglected too long. First in the rank comes the fourth edition of Mr. Payne's *Bee-Keeper's Guide* (T. C. Newby, Welbeck-street, Cavendish-square). We have often referred to this valuable, practical little volume, and as this is scarcely more than a reprint, we need only say in the author's own words—

"It was written almost entirely for the benefit of cottagers, and I am happy to say that for them it has more than answered my expectations; because I can now point to numbers who are paying their rents from the produce of their bees, but not in a single instance where the depriving system is not adopted."

Although the volume is well suited for cottagers' practice, it is not less so for the amateur who desires profit as well as pleasure from bee-keeping. The instructions are ample, and the hives the cheapest that can be employed.

The Dorking Fowl: Hints for its Management, and Feeding for the Table. By John Baily, Poulterer, 113, Mount-street, Grosvenor-square.—We remember to have heard a chimney-sweeper's pronunciation of the word *soot* quoted as an authority, upon the principle that he ought to know best all about his especial commodity! and, according to the same logic, a poulterer should know all about the pullets and cockerels which he trusses daily for the spit. Honest John Baily has thought so too; so, after waiting "above ten years" for some more stalwart champion, he has at length drawn a goose quill, and rushed to the rescue of "the Dorking."

"I propose limiting my observations to one particular breed, and for this reason, that there is none to be compared with it. It is the "Dorking," and it unites in itself, more than any other, all the properties requisite for supplying the table. It is true, birds of eight or nine pounds weight have been obtained from foreign stock, among others, the Spanish, Malay, and Cochins; but though large, they are ill-shaped, their legs are long, ungainly, and of a bad colour, and their flesh generally hard and dry. They are, also, difficult to fatten, as the high breeding stimulates their natural courage and excitability of temper, and, consequently, they become pugnacious and quarrelsome, which prevents their thriving, and renders their flesh prematurely hard. The hens are good setters, and good mothers; there is a natural tendency in the breed to fatten, so that young are made to attain to eight or nine pounds weight, and at table they surpass all others in symmetry of shape, and whiteness, and delicacy of flesh."

Now, we admire this patriotism, springing from the kindred feeling which urged the Norwegian to convince the world that Norway was where God placed the Garden of Eden; yet we place our goose quill in the rest, and declare ourselves the champion of the Cochins China breed. It is quite true that Dorkings *may* be unnaturally fattened up to eight pounds weight, but the Cochins reach to ten and twelve pounds naturally, and with only moderate feeding. We deny that their flesh, when young and fat, is not equal to that of the Dorking,

and their eggs are much superior both in size and flavour. The hens are excellent layers and good mothers, nor are the cocks quarrelsome.

It is chiefly on the preference of breed that we differ from Mr. Baily, for we find all his practical directions excellent. We select the following, only to induce our readers to buy the little volume:—

"*Characteristics of a good Dorking.*—I would choose them with small heads, taper necks, broad shoulders, square bodies, white legs, and well-defined five claws on each foot; touching the claws, I would remark it will sometimes happen that breeding from cock and pullet, each five-clawed, chickens will come, lacking that distinctive mark; it does not follow there is any fault in the breed, as the produce of these chickens will, probably, be five-clawed, but I would only tolerate it in home-bred chickens; in buying for stock, I would insist not only on the presence of the five claws, but on every other characteristic of the breed being prominent."

"*Feeding.*—I advise, from the first, to feed the hen and her chickens well, in the following manner:—Instead of throwing down handfuls of whole corn, let it be ground and slaked with lukewarm milk, to such consistence that when a ball of it is thrown on the ground it will break and scatter about in particles; if there be green-meats, such as onion-tops, chopped fine and mixed with it, so much the better. The chickens should be fed in this manner three or four times per day, and the little extra trouble will be amply repaid by their growth and health. As they get older this may be gradually discontinued, and they may feed with the old fowls, on whole corn. But even with old birds a change of food is not only advantageous but necessary; and I would, therefore, advise that once a fortnight the food be changed for a day or two, and boiled or crushed corn substituted for whole. They must, also, have constant opportunities of pecking among grass and other herbs. Fowls in confinement will starve and pine to death, with heaps of barley around them, unless they have these opportunities. Next, as to water. It is too much the idea that any description will do, and that provided there be some within their reach, though it have been there a week, nothing more is required. This is a mistake. Water for fowls and chickens should be very clean; the pan or vessel containing it should be well rinsed out every morning; it is a good plan to put a little gravel at the bottom, and it should be changed twice a day. I am aware many will be disposed to think this unnecessary, but I will ask any one who has the opportunity to try, whether, where there is a stream of water running through a yard, they can cause the poultry to forsake it by placing water nearer to their haunts: it will always be found they prefer going to the stream to drinking out of the pan or tub."

An Hour with the Hollyhock.—This is another of those very useful little pamphlets prepared by Mr. W. Paul, of the Nurseries, at Cheshunt, in Hertfordshire, and which every cultivator of the flower should purchase. It is full of practical information, but we will give only two extracts showing that its contents are varied:—

"*History of the Hollyhock.*—The old English writers spelt the word *Hollihoocke*, *Holyoak*, and *Holyock*, whence it is supposed to have been derived from the Saxon "*Holihec*." Linnæus considers it a distinct genus, and named it *Alcea*, from the Greek word *ἄλχη*, in allusion to its medical properties, on account of which it was formerly much valued.

"In a work translated from the German, and published in London nearly three centuries ago, we have the following particulars:—

" 'There be divers sorts of Mallows, whereof some be of the garden and some be wild, the which also be of divers kinds. The garden mallow (Hollyhock), called the winter or beyond-sea Rose, is of divers sortes, not onely in leaves, stalkes, and growing, but in proposition, colour, and flowers; for some be single, some double, some white, some carnation, some of a cleere or light red, some of a darke red, some gray and speckled.' Then follows a description, in which it is called 'the Great Tame Mallow, with great round rough leaves, larger, whiter, and unevener than the leaves of the other hockes or mallows. The stalk is rounde, and groweth sixe or seaven foote high or more. . . . The root is great and long, and continueth a long time, putting forth yeerely newe leaves and stalks.' It is there called *Malva sativa* and *Rosa ultramarina*.

"It is evident that at the close of the sixteenth century the Hollyhock was much prized and generally cultivated; for Gerard, writing at that time, states that it was then sown in gardens almost everywhere. In Gerard's Herbal (edition 1636) are three plates of Hollyhocks; 'the Single Garden Hollihock,' which we assume to be the type of the garden varieties of our day; 'the Jagged Strange Hollihock,' whence, apparently, have descended *Sulphurea palmata* and others of that strain; and 'the Double Purple Hollihock.' The writer also speaks of another, 'which bringeth forth a great stalke, of the height of ten or twelve feet, growing to the form of a small tree.' 'The flowers are very great and double, as the greatest Rose or Double Pæony, of a deepe red color, tending to blacknesse.' "

"This state of gradual improvement probably went on extending over a space of 250 years, and might have continued to this moment, had not one cultivator stepped out of the beaten track, and, working free from professional trammels, followed a course of culture dictated by his own observation and experience. This man was Mr. Charles Baron, a man unversed in garden literature, unused to move among the skilled in the hidden and mysterious art, and, probably, knowing little of the vegetable kingdom beyond what existed within the boundary of his own small garden-plot. The Hollyhock was his favourite flower; to attend to it was his recreation; his labour was a labour of love. And thus the humble shoemaker of Walden, by concentrating his attention on a single species of plant, soon distanced all competitors, and originated those flowers which form one of the most striking and gorgeous features of modern flower-gardens."

"Choice of Varieties.—Let us suppose, then, that we are about to plant a seminary, and have decided that it shall contain twelve varieties: how shall we select them? The following have been chosen with the view to embrace every important feature of the flower in the greatest perfection.

- "1. *Attraction*; chocolate and white, very prettily veined. Not a flower of first-rate properties, but distinct, and regarded as the type of a strain of veined flowers.
- "2. *Black Prince*; flowers nearly black, petals opaque and very glossy. The object to be gained here is larger and better-shaped flowers of the same colour.
- "3. *Commander-in-Chief*; flowers rose-colour, edged. A poor variety, but of an elegant branching habit. Varieties of this habit, with improved flowers, are a desideratum.
- "4. *Comet*; flowers bright crimson, very large, and of excellent form. The petals are of great substance, the habit noble, but rather tall. This is certainly one of the best, and we should like to see flowers of every colour equal to it, with the improvement of a dwarfer habit.
- "5. *Delicata*; flowers French-white. This variety, when not hybridized, comes true from seed; hence we should have great confidence in crossing for the attainment of a given end.
- "6. *Magnum Bonum*; a fine rich dark-coloured variety, of the habit of Comet.
- "7. *Napoleon*; flowers red and buff, showy, but not good. Seeds freely. A good flower of this colour still wanted.
- "8. *Obscura*; flowers shaded puce. This is a distinct and finely-formed flower, very soft and silvery in appearance.
- "9. *Queen*; flowers blush. Seedlings from this variety

often come true: *Delicata* and *Model of Perfection* have also been raised from it. Habit fine.

- "10. *Rosea grandiflora*; flowers pink. One of the finest, both as to flowers and habit. It often comes true from seed, sometimes produces Surprise, and occasionally *Delicata*.

- "11. *Sulphurea perfecta*; flowers sulphur, the finest of this colour. Varieties of a deeper tint would be a great acquisition.

- "12. *White Perfection*; the best pure white known. More varieties of this colour are wanted.

"With these materials, and a camel-hair pencil, we are prepared for crossing. The best time for carrying on this work is the morning, and so soon as the dew passes from the flowers. There are, perhaps, no varieties, however double, which will not yield stamens and styles to a close inspection. It is only necessary to collect the pollen from the stamens by passing the brush lightly over them, and to convey it to the flower required to produce seed. Such kinds as are not very double, and seed freely, may be grown in a rich soil, and the spikes may be shortened, leaving, after thinning, about twelve flowers on each. Never allow a bad or imperfect flower to remain for seed; invariably pull off such immediately that it appears. The very double kinds may be grown in a poor soil. The spikes should not be shortened, but the flowers of all will require a plentiful thinning. As the flowers at the lower end of the stem die off, the petals should be drawn from the calyx, to prevent moisture from gathering round the seed-vessels, which would injure, if not destroy, the seed. Hand-picking is, perhaps, the best way of accomplishing this; and if the petals are ready to be separated, they will yield to a slight pull with the thumb and finger. Crossing may be repeated day by day, as the flowers expand, until we reach the top of the stem. The plants should be watered freely during the formation of the seeds; and as the latter ripen (the shrivelling of the calyx is a tolerably correct test of fitness) they may be gathered, and tied in coarse muslin bags—separately or not, as the cultivator may please—and placed in a dry, airy, sunny situation. With such as flower late the spikes may be cut from the plants, and placed upright in a greenhouse, or under a south wall, where the seeds will ripen better than if detached from the stem. The seeds first gathered may be sown immediately, as there will be time for them to germinate and become strong before the commencement of winter. The bulk of the seed, however, cannot be sown to advantage before the spring; and early in March is, perhaps, the best time."

GARDENING GOSSIP.

CARNATION showing in pots has been now fairly tried, and the effect is splendid. At Chiswick there was an immense display, many of the pots having three or four perfect blooms on. If we were to suggest anything for another time, it would be an improvement to have the front row on the ground, and the others a little raised; the front row should not have been elevated on any account. The grass of most of the plants displayed good culture, and looked remarkably healthy.

Messrs. Standish and Noble have introduced some very beautiful species of *Ilex*, chiefly from China, and they are as novel in their construction as they are beautiful. They exhibited a collection at Chiswick comprising many rare subjects not in bloom.

This year will make a wonderful addition to our good varieties of *Pinks*. Mr. Norman, who is declining the cultivation of pinks and carnations altogether, informs us that he has seen four which beat everything we have; they were raised by an amateur. Mr. Turner has some thousand seedlings, among which he has selected a few that he considers very superior. Mr. Trenfield, an old cultivator and raiser, has a little forest of pink seedlings,

from which thirty have been selected for some good property in advance, to be proved by the next year's culture. Mr. Smith, of Witney, has always something new and good, and is progressing this year as usual. We have to thank him already for two or three of the very best. We shall be delighted to recognise any of these novelties, if they are at all in advance in quality, which we have every reason to believe they are, from the experience of our informant, or the specimens we have seen, or in some cases both.

National Floricultural Society, July 10th, E. Foster, Esq., the president, in the chair.

First class certificate awarded to J. Edwards, Esq., Holway, for an *ANTIRRHINUM* seedling; a flower of good form, large size, and novel colour; a clear bright primrose. *PELARGONIUMS* were shown in numbers, but none quite up to the mark even of commendation, except one from Mr. Ambrose, of Battersea; a fancy variety, named *Fine Ball*, which received a commendation, or third prize, the colour approaching a scarlet being its best point. *PICOTEEES* came from Mr. Turner, of Slough. *Dodwell's Mary* received a certificate; had the ground colour been pure white, it would have had a first class; form and substance good, and the lacing perfect. Another Picotee from the same, named *Fellow's Prince Arthur*, had a commendation, but was in a rough state; it will improve by cultivation. J. Edwards, Esq., sent a single bloom of a *PINK*, named *Titus*; a flower possessing many good properties; only one bloom, however, was present, and three are, we believe, required. *VERBENAS*: Certificates were awarded to that successful raiser of these pretty flowers, Mr. Smith, of Hornsey, for one named *National*, and another named *Purple Rival*, both possessing excellent properties. Messrs. Henderson sent their beautiful carnation-striped *PHLOX*, named *P. Mayii variegata*; flowers nearly round, ground colour, white, beautifully striped with bright rose; a commendation was awarded. *Censors*: Messrs. Lochner, Neville, Staines, and Ayres.

The *King of the Dahlias* has bloomed with us, and a splendid model it was one day, but the eye opened the next. While advancing its flower, it is a very common-looking variety, the petals standing all manner of ways; when full blown, they all fall into their places, and exhibit more symmetry than any flower we know. Nobody will consider it very promising until they see a perfect bloom, for it is a vulgar-looking variety in all its younger stages.

There is a talk of establishing an *Annual Sale of Tulips*, to comprise the surplus stock of amateurs and dealers, and new flowers, or flowers still scarce.

As such a sale will bring together a vast number of persons, a good thing will be sure to bring its value; besides which, almost every seller of surplus will want to buy what he has not got; a new flower, too, will establish its value. Mr. Slater, Mr. Wilmer, Mr. Lightbody, Mrs. Lawrence, and several others, have entered their names to send bulbs; and everything will be sold under the warrantry of the owner. It will be advertised in *THE COTTAGE GARDENER* as soon as the day is fixed for 1851.

The *South Devon Horticultural Society* has had a second show, which came off with great *éclat*; not only were all the productions finer than usual, but there were, upon computation, as many visitors at these two shows, as there were at the old Society the last nine.

This rival Society arose out of a question as to out-of-door shows, and, before the South Devon was established, the Horticultural Grounds were offered to the old Society and declined, so that the rivalry has put the original "upon its metal," to the manifest advantage of floriculture in that neighbourhood.

We have seen some hundred *Mimuluses* raised from seed, how, or where saved, we cannot imagine; but of all the weeds that were ever seen they are the worst. The seed was purchased at a London seed-shop.

How anybody can think of obtaining good seed for the price generally paid for packets we know not. Those who save seed that gives them a chance of a first-rate flower will not sell it at any price, because a single seed may be worth five pounds; it is not so with seeds of annuals, because, as there are no means of perpetuating a variety, the finest specimen in the world goes for nothing, except to save seed from.

The leading people of *Chester* have resolved on holding a *grand Show of Horticultural and Agricultural productions* cultivated out of doors, and the powerful array of names which heads the proposal promises the greatest success. One of the principal features is the prominent station allotted to Cottage Garden productions. It is expected that the exposition will be on the most extensive scale, and excite the greatest interest.

All the recent efforts to advance in the *quality of the Calceolaria* seem unavailing, if we are to judge by those exhibited at the shows, or brought under our notice in other ways. The colours sport well, and give many remarkable varieties; but the flowers, whether large or small, are nearly all indented like a melon, or are very flat on the face, or both. We may say that we have seen thousands this year, and scarcely any that we consider an advance.

The best we have seen was one of Grimese's, called *Miss Chatteris*. This was more inflated than any other we have had before this season, but there is no novelty in the colour; and where we have had novelty in the colour, there has, invariably, been a want of shape. The cause is in the careless manner of saving the seed. One gentleman who was once rather fortunate in a few seedlings has gone back altogether, and why? Because he saved seed from his general lot of seedlings, instead of destroying all but the few best; so will everybody who trusts to general collections for seed. It is not only with the *Calceolaria* that seed declines; everything saved from the mass will be comparatively bad; but people are more tempted to keep a *Calceolaria* than some subjects, because it is a pretty plant. However, as it is difficult to persuade anybody to throw away a hundred or two plants of *Calceolaria* in bloom, let them pick out the really good ones as soon as they flower, and remove them to some other part of the garden to a one-light frame, and seed them where they cannot be contaminated. The same frame will do to seed any thing else in, because different families will not hurt each other; and, in choosing those few as the best, recollect that they should be the roundest, the most free from indentation, and the best colours.

E. Y.

NEW PLANTS.

THEIR PORTRAITS AND BIOGRAPHIES.

VIOLET HEBECLINIUM (*Hebeclinium ianthinum*). — *Botanical Magazine*, 4574. — The genus *Hebeclinium* belongs to the *Composite* Natural Order (*Asteraceæ*), one of the largest and the most difficult to arrange in the vegetable kingdom. Although it has been through the hands, and had the advantage of the logical mind of the elder Decandolle, it is still considered, by the best and most accomplished botanists, as only in a temporary arrangement. The subdivisions of the order are, perhaps, as natural as the materials and our present knowledge of the plants would allow of; but it is admitted

on all hands that genera have been needlessly multiplied, and by none more so than by Decandolle himself.



In proof of the above opinion, we need look no farther than to the genus before us. *Hebeclinium* is a genus which naturally falls in between *Ageratum* and *Eupatorium*, and by common observers might be taken for either. The meaning of the word is derived from *hebe*, down, and *kline*, a bed; that is, a soft or downy bed, and this bed is the receptacle, or that part on which the florets rest. Owing to some very slight variations in the covering, or shape of this bed, Decandolle has formed five genera—a new genus for each variation, of which *Hebeclinium* is the middle one; *Coclinium* and *Conoclinium* being on one side of it, and *Campyloclinium* on the other, to which Endlicher added *Lophoclinium*! All these beds stand so close together in the same room, and their furniture is so very nearly alike, that it is no wonder even such skilful botanists as Professor Morren, of Ghent; and Mr. Henfrey, of London, should mistake one of these beds for the other; but so it was on a recent occasion, and the eagle-eye of Sir W. J. Hooker, was necessary to convince these gentlemen—experienced though they certainly are in such matters—which of the five beds was the right one in which to place a young bantling, a native of Mexico, “near Vera Cruz and Xalapa.” This mistake occurred relative to the subject of our present biography. The Belgian cultivators gave it out that this plant is a native of Brazil, and we think we could assign the reason why they did so, if that could serve any good purpose. Mexico and Guatemala, however, have furnished more “Brazilian plants” for continental gardens of late years, than English collectors could believe, and this is but one of them, as the herbarium of Sir W. J. Hooker has just proved! *Hebeclinium ianthinum* will probably be as hardy as some of the Mexican *Salvias*, and as easily increased and managed; indeed, we should not be surprised to hear that Mr. Beaton had a bed of it in a year or two in the Shrubland Gardens.

It was introduced by Messrs. Henderson, of St. John's Wood Nursery. It is rather herbaceous than shrubby, stems round, and covered with brownish down; leaves very pointed egg-shape, on long stalks, doubly saw-edged, and in pairs;

flowers in clusters at the end of the branches, remarkable for their long purple styles, looking like many-flowered rays; the corollas also are purple.



STALKLESS-FLOWERED SOBRALIA (*Sobralia sessilis*).—*Botanical Magazine*, 4570.—This is a genus of ground, or terrestrial orchids, having an aspect widely different from that of the rest of the assemblage of plants known to us as air plants and terrestrial orchids. When the *Sobralias* are not clothed in their splendid blooms, they look like so many marsh reeds; and were it not that the localities, where they abound in a state of nature, were made known to our cultivators when this race was first introduced, some fifteen years ago, the probability is that our gardeners would have begun to treat them as marsh plants; indeed, we have heard of some gardeners who made the attempt, but we know not how far they succeeded. Mr. Appleby deprecates the system of attempting to grow *Sobralia macrantha* as a marsh plant, notwithstanding that fine species inhabits such places as are flooded during the rainy season (see COTTAGE GARDENER, vol. iii., page 335).

Sobralias grow in dry, rocky places beyond the equator, on both sides of the Andes chain of mountains; and the finest of them have not yet been introduced, though they are said to be among the most beautiful orchids known.

Sobralia sessilis was first sent to the Messrs. Loddiges by Sir Robert Schomburgk, and is allowed to be the least conspicuous of the genus yet introduced. The first account we have of the *Sobralias* is by the authors of the *Flora Peruviana* (Ruiz and Pavon), who named the genus in compliment to their own countryman, *Don Sobral*, a Spanish botanist. It belongs to the same section of orchids as the *Vanilla*; and all orchids whatever are classed by Linnæan students in the 20-Gynandria 1-Monandria of their great master.

Sobralia sessilis flowers here in October. Stems about eighteen inches high, upright, jointed, reed-like, clothed with dark leaves; leaves, broad-spear-head shaped, and very pointed, large, round, and plaited, dark grass-green above,

paler beneath; *flowers*, single, at the end of the stem, sepals shaped like the leaves, petals broader, and both pinkish-white; lip, yellow within and pink outside, its margin wavy. B. J.

THE FRUIT-GARDEN.

COMPOSTS.—It may appear early in the season to offer advice about the collection of composts, but, from long experience, we well know there is no period equal to the end of August and through September. At that time there is the greatest chance of a run of dry weather; and sufficient heat in the materials collected to facilitate a decomposition of the organic matter, of which, indeed, soils then contain more than at any other period of the year. It has before been observed, that all composts should be handled when dry; no experienced cultivator will ever be found handling soils when wet, unless it be a case of sheer necessity. If a mass of loamy soil in a wet state were to be thrown on the ground, and the foot placed on it, such would not be fit for the potting-bench until it had been dried, and fairly disintegrated; and the latter operation would, for many purposes, have lost it a character in point of texture which could not be restored. The abuse occurring to soils through being handled when wet is pretty well illustrated by the puddling of embankments, &c.; for here treading, &c., effects the purpose intended, that is to say, the closing up the pores so as to render the soil retentive of water; and this is the very principle to which all vegetation is averse. Soils thus closed not only retain water, but refuse the free penetration of the atmosphere; and the facilitation of the free admission of air constitutes the main principle of all cultural operations.

Thus much premised, we will proceed to some remarks having a bearing on the formation of vine-borders, and the selection of soils for fruit-trees in general. For our own part, could we obtain such loam as we have seen, (and could now lay hands on, had we permission), one kind alone would suffice for every purpose. The character of this would be nearly intermediate, between strong or clayey, and that termed sandy loam. Not one gardener, however, in a score, can obtain this sort of horticultural *carte blanche*; and the greater the pity in many instances that have come within our knowledge; for we have frequently known soil worked up in the making of vine-borders, which the operator knew to be unfit, but which he was obliged to accept, or none. It was stated in the commencement that one kind of loam might suffice: it need not be inferred, however, that there is no difference in soils, or that what suited the vine was equally adapted for every fruit-tree. Such is not precisely the case; and we merely placed the question in that position for a moment, in order to widen the subject; for it has been too much the fashion to insist on a certain loam, or a certain compost, by men who give rules without pointing to principles. In all these things simplicity of plan is the great expediter of business, as well as (generally speaking) the best road to success.

Since our labours are required, in the main, very much for what may be termed small gardeners, that is to say, those who do not possess domains of such vast extent as to enable them to select with ease a soil for any required purpose, we must endeavour to point to what may be termed make-shift compost.

In the immediate neighbourhood of towns it is generally very difficult to get what the gardener terms loam, which, somehow or other, enters into nine-tenths of the composts of all our best gardeners; *malgré* the rather general adoption of peats by some of our continental neighbours. A great amount of other materials, however, are to be had in such situations, which are at once capable of considerably swelling the bulk of the

compost heap, and of much improving, in certain cases, its mechanical texture:—materials, too, which are for the most part perfectly innoxious, if we must modestly claim merely a negative character for them. Of such a character is sawdust, shavings, strawy-litter, brick-rubbish, lime-rubbish, old plaster, the debris from some manufactories, &c., &c. But to return to the loam; for we begin to perceive that this subject may not be settled in one paper. We will, therefore, pursue the subject *seriatim*, and complete it as soon as a chance offers.

Some choose loams by colour chiefly, but more by texture. By texture is meant principally the degree of adhesiveness the soil possesses. Some soils are so open, or, in other words, contain so much sand, that it is difficult to make them adhere, even when wet. Others, again, are so adhesive, that with both chemical and mechanical agencies combined, they only separate with difficulty. These, of course, have a high per centage of the clayey principle. Between these, then, there are many grades, chiefly characterised by the amount of sand they contain. Any one may soon ascertain both the amount and character of the sand any given soil contains by simply washing and straining it repeatedly. We are not assured of what amount of sand a good and generally useful loam should contain in the eyes of practical men; probably from twenty to thirty per cent. This, however, may be readily ascertained by any one about to procure soils, as they may readily obtain a lump of loam known to be fertile from any nurseryman or gardener, and wash it for themselves. We recommend such little experiments especially to our younger friends, who will speedily gain a wrinkle thereby. However, it is not the mere *amount* of sand which characterizes a loam: there is the character of the very sand to be taken into consideration. It will generally be found, that those soils which possess a large and coarse sand are more easily divisible than those with a very fine sand; the latter generally produces a more unctuous feel in the fingers; in fact, something of the character of alluvium, or water deposits. It is an old and good criterion of a good loam, as to texture, to take a lump in the hand, squeeze it close, and drop it from a yard or so in height on the hard ground. If it break entirely in fragments it may be considered too sandy; whereas, a medium loam will only become about half divided.

As to colour, most people talk of a hazel loam; but in our opinion there are loams of other colours equally fertile. Of course it is best obtained from old or rest land; such is generally termed virgin soil; and the longer the land has rested from the plough the better. Neither can it be too abundant in coarse herbage; such is of infinite service, and if it abound, there is small occasion to add manurial matters. When obtained it should be piled up in a sharp ridge to exclude rain, and in a couple of months or so it will chop down in a delightfully mellowed condition; taking care to choose dry weather for all operations connected therewith. In a future paper the subject will be pursued.

R. EBRINGTON.

THE FLOWER-GARDEN.

We are now on the threshold of propagation for another year, and first of all we begin with the strongest sorts of *Geraniums*, though there need be no hurry yet; I only broach the subject in order to dispel, if possible, a very general belief which obtains among some of our amateur readers, that gardeners are in possession of some deep secret, by which, whatever kind of cuttings we take in hand, they are sure to grow or root with us; and that it is next to needless for such as are not in the secret to attempt cuttings without the aid of glasses, hot-beds, and all the rest of it; and I recollect

the time very well, when this false notion was part and parcel of our own creed too. But, in truth, it is much easier to root geranium cuttings at this early season without glasses, or hot-beds, than with such supposed aids. If one had a large empty flower-bed in any part of the flower-garden to-morrow, and had the run of geranium-beds in full flower, nothing could be easier than to have the empty flower-bed in full bloom in about fifteen days, by simply planting it all over with cuttings taken from the top of flowering-shoots in the other beds, without any preparation whatever to facilitate the rooting, unless, indeed, the soil was too stiff. A friend of mine was put to the push near Dublin, some dozen years back, by a very late May frost, after he had planted out all his bedding plants, and he lost hundreds of plants in one night; but his geraniums were only hard pinched in most of their leaves. There was no time to be lost, nor any money in hand to buy others if he could get at them; so with the quickness of an Irishman, though not born in Ireland, he bethought himself of dividing his geraniums, green-house ones and all, into cuttings, which he planted about six inches apart every way, in all the most particular beds, and he declared, when he told me the story, that he never had a better show of geranium beds during the ten years he lived in Ireland, than he had that season from those cuttings; and I fully believe him, for I have often regretted about the end of August, and all through September, that I could not have such models-of-perfection beds in the flower-garden, as were to be seen in the propagating ground, where one might count a thousand heads of bloom all in one patch, and not one out of the lot two inches above or below the regular mass of bloom.

There is not a better place in the world to strike geranium-cuttings in at this season, for the next six weeks, than a good late vinery-border that has been just stirred two inches deep, well soaked with water for the last time this season, and then mulched over with an inch or so of any light stuff to keep in the wet, or prevent much evaporation; two days after such application the border is fit to plant the cuttings in rows across, six inches from row to row, and half that from cutting to cutting in the row; some of the small sorts will do at four or even three inches apart between the rows, and so in proportion in the row itself; but unless one is very much pinched for room, it is a very bad plan to put in cuttings too close together, and more especially thus early, because they soon root now under any circumstances, and there is a long time yet before them to make a strong growth, besides, if they stand too close on the ground, they are sure to blanch each other for want of light and air; and if that happens, how are they to be kept from harm all through a long winter?

A fruit-border, in front of a peach wall, in a good sheltered kitchen-garden, is the next best place to put in geranium-cuttings; and after that, take a space of ground having the nearest advantages to these borders of all you have at command; though, after all, strong geranium-cuttings, if put in within the next three weeks, would root just as well out in the corner of a turnip-field, as on a vine or peach border. I had hoped that a scarlet geranium, called *Baron Hugel*, of which a leaf had been sent to me, was the best marked of the horse-shoe varieties, to recommend this season, but it turns out that I have one as good, as a friend who called here the other day told me so; he had seen a bed of *Baron Hugel*, and he, too, recommends it. The one I possess I received from Yarmouth last year, under the name of *Wighton's Seedling*, and I was told it originated with a friend of mine,—Mr. Wighton, at Cossy Hall, in Norfolk. This seedling, or *Baron Hugel*, should be inquired after in the nurseries by those who admire a bed or fine plant of a really fine horse-shoe geranium.

Dielytra spectabilis.—A large stock of this most lovely

plant should now be propagated for a bed next May. I am not quite sure, yet, if it is really quite hardy with us, as last winter was not severe enough to test its hardiness, and it was too scarce and valuable to be much tried sooner. My firm belief, however, is, that it will turn out to be as hardy as any of our border pæonies, and that the same culture will suit them both; but for the present, and for those who have not a good stock of it, the way I would advise this season, is to manage it just as they do very scarce dahlias,—to strike every cutting they can get hold of to the end of the season, to root them in a hotbed, and to keep them growing in separate small pots as late in the autumn as the leaves keep green, and to preserve them through the winter quite dry in the pots, along with the dahlias or *Salvia patens*, and next spring to plant them out in very rich soil, in the choicest bed about the place. It is not right to allow this gem of a plant to go dry in the summer, as some of us did the first season after flowering it in pots early in the spring; no matter how early it may be forced into flower, and no plant is more easily treated that way. As soon as the flowers are over, the plant, after being hardened by degrees in a cool frame, should be planted out into good soil, and it will go on growing and be in full vigour by the month of July, to furnish cuttings for the next two months. I have it so just now, under my room window, in an experimental bed kept for choice and rare things, and *Cantua dependens* growing by the side of it,—at any rate, going to grow, for it was only planted ten days ago. Every one who has any taste for plants, must get this *Cantua* as soon as he can afford to buy it. It is worth its weight in gold just now; but we shall have it soon as plentiful as black-berries, and as cheap. Whether it will drive all the fuchsias out of the country or not, no one can tell yet; but they say it is a fearful rival for that family, and as easily managed and increased as any of them, and about as hardy. I saw plenty of its flowers at the Regent's Park Exhibition the other day, but when I was just going to examine them, who would come along but the great African lion-killer, Mr. Ronaylan Gordon Cumming, and not having seen him since I used to pull his little ears for picking strawberries at Altyre, I forgot all about the *Cantua* and went after him, admiring his growth and bloom, so I must be content to believe what better judges say about it, and to recommend it accordingly, which I hereby do most earnestly. I would also advise that as soon as one receives it on this side of the 20th August, it be planted out on a warm border, in rich light soil, for that will set it a-growing for a couple of months, and give it more strength and blood, so to speak, than it could receive by pot-culture in double the time. Pots are by far the best things to hurry on a new plant early in the spring; but after Midsummer, or at any rate, after the middle of July, there is no better way of putting a new half-hardy plant, like the *Cantua dependens*, on its legs, than this way of planting them out of the pots. Gardeners from the Continent say that we are wrong altogether in nursing new and rare plants, indeed, all young things, in pots, and that the best way is to make up suitable hotbeds for those plants that require heat, and close cold frames for such as are more hardy, and then to put a layer of six inches deep of a good mixed compost in those hotbeds and young frames to turn out the plants into. This would certainly be by far the best way for nurserymen to get up a hasty stock of a new plant, and, perhaps, also for gardeners, who would know to a day when to take off the glass, or take up the plants for repotting, and also when they were making too much growth,—for a plant can be made to grow too fast as well as too slowly, and the former is often the worst plan of the two. With all this, and some allowance being made for our prejudice in favour of pot culture, I think it is not so safe for the

great body of our amateur readers to turn out their new flower-garden plants into hotbeds, and to keep them in pots when they buy them in spring; but I am quite sure that the turning out of a new plant into the open ground is by far the best and safest way after Midsummer; and if it is not hardy enough to stand out for the winter, the old plan of cutting round the roots a week or two before it is taken up in October, is as good a way as any to secure a sure removal. It is the same in all respects with pet seedlings reared at home; if they were in pots up to this time, and have proved themselves, by all means let them be turned out into the open ground at once.

The only exception to this rule that I can think of at present is, that of a lot of cuttings of *Queen Victoria* and other fancy geraniums that were planted out on an open border last May, and are intended to be reared into tall standards for another year. Their own state or appearance, from this time to the end of September, would be my guide rather the week or month in which they should be taken up and potted. These should not be allowed to grow too strong before they are taken up and potted, because in that state they would be more liable to a sudden check; but I would not much mind to see them making three inches of young growth before I removed them, provided that that growth was not of a very soft, succulent, or gross nature; but *Queen Victoria*, in particular, is very liable to this way of going off from the cuttings in the open ground; and the reason is, that it makes new roots long before it shows any symptom of growth, which is not the general rule with geraniums. I hope every one who can provide a little extra heat in winter will try this experiment, if only with a couple of Queens; but all the perpetual flowers that will stand winter forcing will answer equally well; and how magnificent it would look to have a large circular bed filled with such specimens of different colours, scarlets ten feet high in the middle, say one plant in the centre, and two circles round it, all of scarlets; then *Queen Victoria*'s, eight feet high, for the next two circles; any colour would be safe after the Queen's, as their whiteness would be a good break between the scarlets in the middle and any other shades of red, or pink, or mottled sorts, and rings of six feet high plants; four feet and two feet might follow, and then a low edging of white or pink ivy leaf, or of scarlets propagated late in the spring, on purpose for very dwarf plants; and in some cases the variegated sorts might answer, but the edging plant would be suggested by the flowers of the last ring or two in the bed, or what is just as good, by the taste of the owner. I have no notion of critics who are inflexible, as if they were made out of a different clay from ourselves. If I prefer, for my own private gratification, blue and white, or pink and yellow, to other colours, what is that to the Emperors of Russia and China, or to anybody else, provided that I do not push my own taste into another man's dish; that is a very different thing from recommending or insisting publicly on what is accepted by the general consent of those who studied and understand the subject, whatever it may be. Some people may doubt the possibility of getting up geraniums to the height of ten feet or more, but there is no doubt at all about the matter, neither is there any novelty in the thing. Many of our readers grow them to that height. If I recollect right, a correspondent who sent me a plan of his flower-garden last winter, showed several beds that were planted with immense large scarlets, some of them more than ten feet high; but ten feet is quite high enough out of doors, unless it be for plants against a house or wall, and then the height of the wall itself must be the limit. Standards of *Fuchsia corymbiflora*, after they get four or five years old, are noble things for rows, or kind of garden avenues; and a few more of the

very strongest and best-coloured hybrids look exceedingly well on the grass as standards after a few years' growth.
D. BEATON.

GREENHOUSE AND WINDOW GARDENING.

RAISING PLANTS FROM EXOTIC SEEDS: PRE-REQUISITES TO SUCCESS.—Comparatively few of the plants we now cultivate for ornament or utility are indigenous to our country. For the great proportion of them we are indebted to the right-directed enthusiasm of travellers and collectors. A keen amateur has scarcely become a cultivator, before he feels anxious to be connected with the introduction of a novelty. Hence, the promises extracted from travelling friends. Will the plants from seeds thus obtained, thrive in my garden, my window, my greenhouse, or will they demand a plant stove? are questions, that for the present loom indistinctly in the distance, and yet they must be answered somewhat satisfactorily, or a commendable zeal may shortly be exchanged for a soured disappointment. I have said *somewhat* satisfactorily, because, even we gardeners are only beginning to see the importance of knowing everything we can of the history of a plant before we begin to cultivate it; such as the latitude of its birth-place, its altitude, its mean temperature, the highest in which it luxuriates, the lowest it will endure without injury, its situation, insular, or continental, near the level of the sea, or thousands of feet above it, belonging to the Old World or the New, and many other circumstances as respects shelter, soil, draught, and moisture, too tedious to mention, yet all highly necessary, and as respects a great portion of which we possess only imperfect data, but quite enough to make us the more anxious for the possession of more, as well as the more easily obtaining of that which has been already published. One of the best references on this subject that has fallen in our way, are the condensed tables on the mean temperature of different latitudes for the year, published in the second and third part of the fourth volume of the *Journal of the Horticultural Society* (1849), prepared by Mr. Robert Thompson, whose very name is a security for accuracy, and who, by this labour, has increased, if it were possible, the obligations which every lover of gardening must feel towards him. Defective as Mr. Thompson admits these tables to be, still, as embodying almost all that is yet known, it is hoped that as they are arranged *professedly for the benefit of gardeners*, the Society might be induced to publish them in a separate form, and so cheap as to render them generally diffusable.

Before committing our seeds to the ground, let us just glance at a few of the *pre-requisites* for insuring success. The most important of these is the securing to the plants, when reared, a *temperature similar to what they would have enjoyed in their native locality*. An index to the requisite temperature is furnished, First, *by the latitude of the place*, heat somewhat gradually, though not quite regularly, decreasing from the equator to the poles. Within the tropics, north and south of the equator, there is little difference in the temperature when taken at similar levels. The mean temperature at the equator seldom exceeds 82°; the climate is chiefly distinguished for equability; twice in the year the sun is vertical to every place, and, therefore, it possesses two hot and two cold seasons; the difference, however, seldom exceeds a few degrees. The difference in other respects, however, is wonderful; at one of these periods the earth is deluged with continual rains, at the other seldom a drop falls. Beyond the tropics the heat, as we have said, rapidly declines, because the rays of the sun fall upon the earth more obliquely; at the latitude

of 30° the mean temperature is 70°; at 40°, 63°; at 50°, 50°; at 60°, 40°. In America, or the New World, the temperature is lower, ranging from 3° less at the latitude of 30° to some 12° or 14° less at the latitude of 60°. There is also a difference in the temperature of the northern and southern hemispheres in the same latitudes, the northern being warmer in summer and colder in winter, and the southern being cooler in summer and warmer in winter. A temperature too high is just as fatal to a plant as one too low; the growing of *wheat* at the level of the sea in the tropics would be equally successful with the growing of palms in the open air in England, though from different causes. Our correspondent who made the enquiry about Cape shrubs, last week, will at once perceive that between the colony and his position there may be some 17° of latitude, without even noticing that he is situated in a different hemisphere, also that the medium temperature at the Cape will be about 65°, while where he lives it may be less than 50°; and this is not all, for while the difference between the highest and lowest temperature at the Cape will not greatly exceed 12° the difference in his or her garden will be nearer 28°, and frequently a great deal more. Thus, it is no uncommon thing to see the thermometer in the shade, in England, at 80° in summer, and as low, and lower, than 20° in winter. In rearing exotics, therefore, the mean temperature of the year, or even of every month in the year, is of far less moment than the ascertaining, Secondly, what is the highest and lowest temperature to which a plant is naturally subjected. So far as this goes, there is a great deficiency of information, but much will, ere long, be done to remedy it. In our climate, other things being equal, one degree of latitude is nearly synonymous with one degree of temperature. In insular situations, the summers are cooler and the winters warmer, though the mean temperature of the year may be nearly similar to what is seen in similar latitudes in the middle of a continent. Thus, though Vienna be three degrees nearer the equator than London, there is very little difference in the mean temperature, but the summers are hotter and the winters colder, and, therefore, many fruits will ripen *there*; whilst, on the other hand, shrubs will thrive here which would be destroyed there. In Cornwall, again, where a misty vapour hangs over it, by being so nearly surrounded by sea, there is such a mild climate, that myrtles and hydrangeas flourish out of doors in winter, which would be killed in a similar latitude on the continent; but in the latter much better fruit could be obtained than by possibility could be ripened in the mistier atmosphere of Cornwall. The temperature at Quito, in Peru, some eight thousand feet above sea level, though beneath the equator, is somewhat similar to the temperature of France, when the mean of the year is taken, and yet many plants flourishing in Quito, would be killed out of doors in France, because there the thermometer sinks often to 23°, while at Quito, the temperature partaking of the equability of the tropics seldom falls to 40°. The firmness of texture imparted to plants from a high temperature, and a clear atmosphere in summer, enables them to bear a degree of cold which they would not do with us, because we cannot command the bright sunlight of such a summer. There is a most valuable paper by Dr. Lindley, on the temperature to which plants in New Holland are exposed, in the number of the journal referred to. The low temperature indicated by the thermometer at sunrise would be a surprise to many. We could only trust such plants in such a temperature here, after being able to give them the clear dry atmosphere, and high temperature of a New Holland summer. Thirdly, *Altitude* must be taken in connection with latitude; and here, in many respects, our information is limited, though few things could be more important. The matter of 500, or

1000 feet elevation, is of consequence even in our own island. As heat decreases from the equator to the Poles, so also does it decrease from the surface of the earth to the highest experimented-upon limit of our atmosphere. Some of the notes of Mr. Green, the veteran balooner, are in this respect most interesting. The decrease was gradual for the height of ten thousand feet, after that most rapid. It has been said that rising in altitude 600 feet reduces the temperature as much as the distance of one degree of latitude from the equator. This is, however, far from being generally correct. Measuring from the level of the sea into the air, we come to a point where the moisture in the atmosphere remains congealed in ice or snow. At the equator, this point is at the height of 15,000 feet; at 35° north latitude, it is 11,000 feet; at 45°, it is 8400 feet; in the 50th degree, 6000 feet; in the 60th degree, 3000 feet; and in the 70th degree, from 1200 to 2000 feet. Taking these facts into consideration, we come to the conclusion, that the altitude sufficient to lower the temperature equal to one degree of latitude, will depend upon the distance of that degree of latitude from the equator, and other considerations, such as insular and continental, northern or southern hemisphere. According to Decandolle, heat decreases in France at the rate of one degree of latitude to 540 feet of altitude. But Humboldt states, that in the middle of the temperate Zone, heat decreases in the ratio of one degree of latitude for 300 feet of altitude. No certain data, no progressive ratio, that I am aware of, has yet been demonstrated. We shall not go greatly wrong if, on ascertaining the altitude of a place, we reckon 600 ft. of altitude at the equator, 500 ft. at the extremity of the tropics, lat. 23½°, 400 ft. at the latitude of 30°, 350 ft. at 40°, and 300 ft. at the latitude of 50°, as equal to the lowering of the mean temperature of the year, by the recession of one degree of latitude from the equator. It has also been said, that plants flourishing within the tropics at the height of 7000 feet, ought to flourish in the climate of England; but this should be adopted with the reservation, that even at a high altitude within the tropics, the elevation is distinguished for *equability*, and, consequently, there is not the difference between the hotter and colder seasons as there is with us. The farther we recede from the tropics, this difference becomes more striking, and is seen more upon continents than islands. This changing of climate with altitude, gives to the tropics a grandeur and variety, of which we who have not seen them can form but an inadequate conception. There, in the plain near the sea-level, flourish the Banana, the Palm, and the Cocoa-nut; at a higher elevation, will be found trees and shrubs, which, instead of a warm stove, will flourish with us in ordinary greenhouses; while at an altitude of from 7000 to 8000, and 9000 feet, may be cultivated with success the fruits and corn of our own climates. At such altitudes, where in our latitudes existence would be next to impossible, owing to the coldness and rarity of the atmosphere, are placed some of the finest cities of Spanish America. Fourthly. Several other characteristics of the climates of exotic plants deserve mentioning, but our space is filled. General as the remarks have necessarily been, they will in some measure be a guide to the receivers of plants and seeds from abroad, who have hitherto paid no attention to the subject. Amateurs, by attending to the subject, would soon be able to enlighten us in return for our practical lessons. One more characteristic we merely mention. The difference of mean annual temperature on the east and west sides of our continents. For instance, barley will ripen well frequently in Norway, at the 70th degree of north latitude, but in Russia it seldom ripens beyond the 60th, while on the eastern shores of America, it is said that wheat can scarcely be grown beyond the 53rd degree of latitude. There is a

difference in temperature and humidity on the western and eastern coasts of our own island. Glasgow and its neighbourhood possesses a higher mean temperature than Edinburgh and East Lothian, and yet, owing to a clearer sky and drier atmosphere, the latter is the better corn-producing country, while the former excels, it may be, in grazing properties, from its proximity to the Atlantic, and the haze and drib-dribble which is humourously said never to be absent there. Hence, no doubt, the old adage, founded upon the principles of commercial interchange, and with some exceptions applicable to most of our island—"Carry corn to the west. Drive cattle to the east."

R. FISH.

HOTHOUSE DEPARTMENT.

EXOTIC STOVE PLANTS.

ALLAMANDA NERIIFOLIA (Nerium-leaved A.).—The fine genus of *Allamanda* has several species that are amongst the best of our stove climbers; and are equally handsome, whether planted in the border of the plant stove and trained up the rafters, or grown in large pots and trained to a globular trellis. The noble specimens exhibited in pots at the Metropolitan exhibitions are examples of successful culture by the latter method. Yet, on account of the size they attain, and the room they occupy, it is only in places where the houses are large, or numerous, that such noble plants can be successfully produced in bloom. Hence, cultivators who have only one stove, and that, perhaps, a small one, are obliged to forego the pleasure of growing *Allamandas* at all. We have, however, the pleasure to announce to persons so situated, that there is a new *Allamanda* suitable for their circumscribed room or means. We allude to the one, the name of which is at the head of this paper, viz., *Allamanda neriifolia*. This plant has leaves about four inches long, verticillate, that is, in whorls round the stem; the flowers are, it is true, but small compared with its gigantic brethren, yet large enough to be showy and attractive. They are frequently produced upon plants a foot high, and numerous when they are two feet in altitude. Each flower is nearly three inches long, and one-and-a-half inch wide. Like all the rest they are of a bright yellow colour. The plant is a low stove shrub, not a climber, and is, when in bloom and well managed, a truly handsome object. Price 7s. 6d.

Culture.—Soil—loam, peat, and leaf-mould, in equal parts, with a due portion of sand added to keep it open and pervious to water.

Propagation.—By *Cuttings*.—The best are made of the young shoots with two joints. If a quantity is wanted, the stem may be cut into lengths of one joint each, and then split into as many parts as there are leaves; the bud at the base of each leaf will grow and form the new plant. The cuttings with two joints, however, soonest make good strong plants. The leaves of the two-jointed should be cut off the lower joint, and those of the top joint left on. The 5-inch pots for the cuttings should be effectually drained, filled to within one inch of the rim with the usual compost, the remaining inch with pure white sand. This should be watered from the fine rose of a watering pot to make it firm. Plant the cuttings round the edge of the pot in the usual way, and place them in a propagating house upon a heated bed of sand, or fine charcoal, or sifted ashes, whichever is most convenient or easily procured; covered with hand-lights, with a moveable top, keep them close during the day and night, but they should have an hour's fresh air by taking off the tops of the glasses every morning to allow the damp to evaporate. They can then be watered if they require it, any dead or dying leaves removed, or any other little attention they may require. They

will root in about six weeks, and should then be potted off into small pots, and kept for a month longer under the hand-glasses. After that time they may be repotted in a size larger pots, and be placed upon a shady shelf near the glass of the stove. When they have reached the height of three or four inches, nip out the top buds, to cause them to make bushy plants.

Summer Culture.—Whilst the plants are young they must be carefully attended to. Never allow them to flag from the want of water. Syringe them gently over head every day, and repot frequently. When the shoots are five or six inches long, place as many sticks as there are branches in a sloping direction from the plant, bring the shoots carefully down towards them, and tie them to the sticks. The centre of the plant will then be open, and when fresh shoots protrude from the bottom, top them, and tie outwards the next tier of branches, so as to form the bush into a compact handsome form. Keep each shoot firmly tied to the stakes. The second years' plants will be fit to flower, if happily every care has been bestowed upon them. After they have done blooming, cut them down, give no more water until fresh roots and shoots are beginning to push forth; then top dress them, place them in gentle heat, a tan-bed is the best, and let them make fresh shoots before winter.

Winter Culture.—The only difference between the treatment for this season and the last, is to give much smaller supplies of water, and to keep the house ten or fifteen degrees cooler. This will give a season of rest equally as necessary for stove plants as for the hardy shrubs in the open air, though not to that extent.

GORDONIA JAVANICA (Javanese *Gordonia*).—This lovely shrub is now in flower here. It was exhibited at the last Chiswick Exhibition, and obtained the Knightian Silver Medal. It is a neat-growing low bush, flowering freely when only a foot high. The flowers are white, about the size of a half-crown. The anthers are numerous, and of a golden colour. The contrast between the two colours rendering it a showy object, even at a considerable distance. 7s. 6d. *Culture and propagation* the same as the *Allamanda*.

T. APPLEBY.

FLORISTS' FLOWERS.

MR. GLENNY ON FLORISTS' FLOWERS.

The discouragement of seedlings by the authorities at Chiswick has well nigh banished them from the Horticultural Shows there. Our notice of the seedling tent at the last exhibition must be "a beggarly account of empty" tables. There were only four or five *Fuchsias*, of which we shall say a few words; two or three worthless *Petunias*, very large and very flimsy; and some *Pansies* in pots, perfectly disgraceful to any gardener. Of the *fuchsias* which were contributed by Mr. Turner, *Diadem* was the best; it is the one already noticed as reflexing as much as a Martagon lily; we wish the petals were wider, but it is a very decided improvement on the red varieties. *L'Elegant* is a pale variety, not very novel nor very striking, it reflexes about as much as *Elizabeth*. *Black Prince* is a red variety, with very long sepals, which reflex rather gracefully, but require the bunches to be horizontal for them to hang free; as a variety it may be grown, but there is nothing to place it high among our present favourites; there is not contrast enough in the colour, nor width enough in the sepals to make it a favourite, although it reflexes a little, and rather gracefully. It is to be regretted that so fine a field for the exhibition of seedlings should have been lost to the floral world by the discouragement given at Chiswick, and, unless some steps be retraced by the Society, we fear the exhibitions here will fall off. There

ought to be a tent appropriated to novelties exclusively, and very competent judges ought to be appointed to decide the merits of everything exhibited; not the common-place judges who go over the other portions of the exhibition, but persons who have a horticultural character to lose, and whose certificate would tell for something in the horticultural world.

SIDONIA, a new Fuchsia, strongly recommended by us last autumn, has been flowered by several amateurs, who have thanked us for calling their attention to it, and state, in various terms, their high satisfaction at its very beautiful habit, and exceedingly novel bloom. One of the qualities which add value to this variety is the length of time the individual flowers stand in perfection.

ANTIRRHINUMS (*J. D.*).—We have so often condemned these weedy and ugly things, and now have so many before us without a redeeming point, that we had better say a few words at once to the raisers generally; they are all on the wrong tack. The antirrhinum, independently of its form, which we have often described, must, to be good for anything, be a brilliant self, or a distinct two-colours, not a shaded, cloudy, indistinct blending of darker and lighter colours, but a positive, well-defined contrast. The striped kinds are intolerable, the speckled are worse. This flower is not adapted for pot-culture but for borders, and everything for bedding must have colour. The old *Pictum* has a white tube and a scarlet crimson mouth; this looks well, it is the nearest to a good contrast of all the tribe. Seedlings from that may probably bring larger and better formed flowers, with the same contrast of colour. There are not half-a-dozen worth growing among all the named varieties, and not one so good as old *Pictum*, bad and ill-formed as it is. *J. D.* will now see why we condemn the whole 24 he has forwarded.

PETUNIAS (*M. A., Oxon.*).—These will never be worth growing until we can get thick petals and bright colours. All the veiny sorts present great sameness; we must have bright colours and good substance before we call anything first-rate. The Petunia looks always flabby when the sun has been out some time. The variety marked A 2, in this batch, is of excellent form, but too thin for anything; the rest not worth notice.

FLORISTS' FLOWERS CULTURE.

PELARGONIUMS. — *Propagation: By Cuttings.*—Cuttings may be put in and struck from March to August; the general time, however, is when the plants have done flowering, and require cutting down to make bushy plants for the next season. This generally happens from the end of June to the beginning of August.

The best place to strike the cuttings in, is, of course, a well-constructed propagating house; but as every one has not such a convenience, they may be very successfully propagated in a frame set upon a spent hotbed, first removing the soil, and replacing it upon a thick coat of coal ashes to keep out the worms. Upon this coat place another of dry sawdust to plunge the cuttings. This dry sawdust will serve to absorb the moisture from the earth in the pots, and the necessary waterings. This being done, then proceed to prepare the soil and pots. The best soil is pure loam mixed with silver sand. The size of the pots should neither be too large nor too small—five inches wide at the top is the most proper. Some use small pots, and only place one cutting in each. This, where the cuttings are few, and the convenience small, will be suitable enough. It has this advantage also, that the cuttings are, after being rooted, more conveniently repotted, without in the least injuring the young and tender roots, but where the quantity to be increased is large, the former method of putting in

several cuttings in 5-inch pots, will be more convenient, and, with care, equally as successful. Whichever method is adopted, the pots must be well drained with broken potsherds, the larger pieces at the bottom, and smaller at the top. Fill them to the top with the prepared loam, which should be put through a rather coarse sieve to take out the stones, roots of grain, and other extraneous matter. It should not be pressed down too hard, but made firm enough to hold the cuttings fast. Another point is to use it in a state neither wet nor dry. All these precautions and preparations being attended to, the next operation is making the cuttings. The side shoots which have not flowered, and are not more than two inches long, make the best. These should be cut off close to the stem from whence they spring. If cut off with a sharp knife they will not require to be cut again at the bottom, unless the cutting is too long, then they should have a clean horizontal cut just under a joint to make the cutting the right length. Cut off the bottom leaves close to the stem, leaving only two of the uppermost. Place the cuttings, after they are made, in a shady place, upon a dry board or slate, to dry up the wound. This will take an hour on a dry day, or two hours on a dull cloudy one. Then put them in the prepared pots, round the edge, inclining the leaves inwards, so that they may not touch the leaves of those in the contiguous pots when they are placed in the frames, or set upon the heated material in the propagating house. When a pot is filled, give it a gentle watering, and set it on one side to dry up the moisture on the leaves and surface of the soil. Then plunge them in the frame, and shade them carefully and effectually from the sun, or even from the light, till they form a callosity (a swelling at the base of each cutting). After that, reduce the shade gradually, using it only during bright sunshine. A little air may also be given every day, by tilting up the lights behind, if in a frame. The propagating house will only require air when the heat is too great, to reduce the temperature to 55° or 60°. The cuttings must be frequently examined, to see if roots are formed; and as soon as they are an inch long, pot them off immediately into the smallest 60-pots, which are generally about two inches diameter. A small addition of well-decomposed leaf-mould may be mixed amongst the loam with advantage. When they are finished potting off, give another gentle watering, and replace them in the frame or propagating house until fresh roots are formed; renew the shading, but disuse it as soon as it is safe to do so, and then give plenty of air, to prevent them being drawn up and spindly. To cause them to become bushy plants furnished with branches close to the pot, nip off the top bud; the lower side buds will then break and push forth, and these must be again stopped as soon as they have made three leaves. The plants will then be ready to receive a second potting, and should be removed into the open air. The finest young geraniums we ever saw, were in this stage plunged into a gentle hotbed, without any covering of any kind over them, a space being left between each plant to allow them to grow dwarf and bushy. In a very short time they became bushy, broad-leaved, healthy plants, and required repotting into 7-inch pots. They were again plunged in the now spent hotbed, and when the time came to remove them to the stage of the greenhouse, they generally measured seven or eight inches diameter, and were not more than five inches high; the foliage was dark green, healthy, large, and so dense that the soil in the pots could not be seen.

The above remarks and directions, as far as the cuttings are concerned, relate only to the as-they-are-called *show* varieties. There is, as is well-known, another class of pelargoniums, which are denominated *fancy* varieties. These are more difficult to increase by cuttings, though our esteemed and excellent co-adjutor, Mr.

Beaton, says they may be struck easily and certainly by sticking them in behind a north-wall, under hand-lights, or even without (we quote from memory); but as they are managed successfully enough at Pineapple Place in quite a different manner, without at all disputing our good friend's success, we shall advise our readers to follow our plan, or, if they choose to try Mr. B.'s method, do so by all means, but do not depend entirely upon it. Our method is to place the cuttings in shallow pans, one-and-a-half inch only deep, with a hole in the centre, in the usual loam and sand, placing them on a shelf in the propagating house, or in the frame, close to the glass, upon topsy-turned pots. The cuttings are made very short, with a portion of the old wood at the bottom of each. Very little water is given till the callosities are formed, when it is given more freely, and then roots soon make their appearance, when they are immediately potted off, and the usual treatment followed. There are two other methods of propagation, by buds and by cuttings of the roots, which we must defer giving till next week.

T. APPLEBY.

THE KITCHEN-GARDEN.

ROUTINE WORK. — *Asparagus*. — Continue moderate and frequent applications of salt during showery and gloomy weather, also, if it can be afforded, good soakings of liquid manure. Where *Borage* is in considerable demand, cut for drying whilst in bloom, and make another sowing. Observe, in favourable weather, that the recently-planted *Borecoles*, *Kales*, *Savoys*, *Brocolies*,

Brussels Sprouts, and that all kinds of winter stuff and *Coleworts* have their vacancies filled up, the yellow leaves picked off, and a loose surface maintained about them. Continue to plant out *Cape Brocoli*, *Cauliflowers*, and *Grange's White Brocoli*. Encourage the growth of *Celery* by surface stirring, and the application of abundance of water, liquid manure, &c.

Cucumbers continue to stop; peg out the newly-made shoots, and keep them tolerably thin; secure good straight green fruit for preserving, and have the gherkins collected while they maintain a good colour, and previous to their running any risk of becoming spotted by the influence of too much wet, &c. Continue to make plantings of *Coleworts*, *Endive*, and *Lettuce*, and make another sowing of each. Keep all the spurious and small shoots cleared away from the *Horseradish*, and apply a good soaking of liquid manure. Plant out full crops of *Leeks*, and sow *Onions* and *Horn Carrots* for autumn use. Sow the principal crops of *Cabbage*. Sow *Cucumbers* for autumn culture. Keep the vine of *Melons* thin, and uniformly pegged or laid out; care should be taken, more particularly as the season advances, to keep all the fruit intended to swell off, placed on glass, slates, or tiles, and the blossom end of the fruit placed to the north. Particular care should be taken to select seed from the handsomest shaped fruit of the best varieties.

Mushroom Beds should be made in succession from good materials selected from the stable-dung, half-dried cow-dung, and good holding loam incorporated, and well rammed together.

JAMES BARNES.

MISCELLANEOUS INFORMATION.

ALLOTMENT FARMING—August.

THE principal policy during this month, is to get every vacant spot, and, also, intervening spare portions, filled with materials for the coming winter, or the ensuing spring. It is in vain to think of producing anything profitable, as to bulk, after this month, indeed, we had almost said after the middle of it. Let therefore, every sinew be strained to carry out such things; and let the eye carefully scan every nook and corner, as well as the standing crops, and by a keen anticipation, fancy what the position of the existing crop will be in a month's time; also, whether anything can be introduced amongst it without material injury to the produce. Of course, where peas, beans, lettuces, spinach, or any such ephemeral or summer crops are removed, the ground should be immediately manured, well dug, and planted; waiting a few days if any prospect of rain appear. We would not, however, in regard to rain, be cajoled out of more than one week, but call out the waterpot.

Where it so happens that the allotment man has both open ground of this character, and intervening portions between the crops to fill, we advise the use of *Swede turnips* for the open space, and any of the winter greens for associative crops. The manuring for the Swedes should be pretty liberal, and not dug in very deep, however meritorious deep digging may be in general, for these turnips have a short existence to run, and must be in quick action. Above all, a small sprinkling of guano, if a good article, would be of immense service.

The Swede is so very useful, either as pig food, or for the cow, that it assuredly ought to hold the first rank as an allotment crop, where the possessor has a pig or a cow. It is even very sweet and nutritious for the cottager's family; yet we are sorry to find a prejudice exists in the minds of many as to its use, merely because it is used as cattle food. We, however, seldom pass a week through the winter, without boiled Swedes one day, at least, and find that combined with carrots, a few peas, a lump of fat bacon, and a few potatoes, it forms an excellent repast. Besides this, what more handy for transplanting purposes, or for filling up gaps amongst other root-crops. All these things combined

place the Swede first on the list. And here we may advert to the *Green Kale*, and the *Brussels Sprouts*. It is not unusual to see these things stand in the seed-bed until they become long in the leg, and gawky things they look. Now, although we are prepared to admit, that as a general maxim, short, firm, and stocky plants are best with most things, yet cases frequently occur in which such long-legged plants become exceedingly useful, more so, indeed, than better plants. In forming a portion of mixed cropping, it is sometimes necessary to select a crop, which, when planted, shall be free from coming in contact with the existing crop. Here our long-legged kale is just at home. Of similar character are the Brussels sprouts, and, although not so profitable as the Green kale, yet they are of much service, as they begin producing their side sprouts much earlier than the kale, and continue furnishing them in a regular progression from November until nearly May-day. They are, moreover, the hardiest greens in the kingdom; no amount of cold appears to have the least influence over them. In casting our eyes over allotment plots in general, and the cottage-garden, we shall find *Peas* removed, or in progress; the *Broad beans* on the eve of departure; the *Onions* almost ready for bending down in order to insure an early, and, by consequence, a safe harvest, together with keeping properties; and after these, such little summer things, decaying or decayed, as spinach, lettuce, cauliflowers, &c. &c. Some of these plots will already have been provided with a part crop, some wholly occupied. Let, then, every inch be carefully examined, for every inch ought to contribute its quota to the rental. The old Scotch wives have this saying, "mony a little makes a mickle," which means, in plain English, that a many little things, each a mere trifle in itself, put together, make a thing of importance. Solomon, also, says "He that despiseth little things, shall fall by little and little." So now our cottage and allotment friends may take a hint from these sayings, which are by no means shorn of their fleece, although passing so many times through the clipper's hands.

CULTURAL AFFAIRS.—It may now fairly be supposed that

all the keeping roots have passed the ordeal of singling out, the final thinning, hand-hoeing, and a thorough cleansing from weeds. Such being the case, little can be done for these during the month of August; seed weeds, to be sure, may rear their heads occasionally, for after the most careful hoeing, or other cultural matters, some of these rogues will lurk behind in snug corners. Need we point to the immense importance of withdrawing them before a seed is shed. If the ground becomes baked, by all means try and get the hoe through it once more. If this is to be done, however, let it be in the *very beginning* of the month, and before the rows "shake hands," to use a farmer's phrase in these parts. When once parallel rows meet, no mere cultural process can fairly be carried out, without the operator doing more harm than good. The crushing of the principal foliage at this period cannot be compensated for by any hand work.

Bolters.—This may appear an unseemly term to apply to mangolds, carrots, &c., running to seed. It will be well, however, to accustom our allotment friends, who do not hunt for "holiday phrases," to the ordinary terms used by mere practical men. Such terms, and, indeed, all technicalities may one day merge into an universal tongue, or mode of speaking, but as the learned men say, and always did say—we are in a transition state;—when we are to arrive at the terminus of worldly knowledge is a secret for the present, hermetically sealed. The term "bolters," as applied to vegetables, signifies a hurried or premature condition. Early sown mangold, carrots, and by chance the Swede, are liable to this, especially the two former; and we name them here, in order to advise the cow or pig "tender" to look over his plot sown, and draw all such away. The pig or cow will greedily devour them, and the removal of such will cause the adjoining plants to acquire both extra size and quality.

The Various Grains, &c.—Again we beg to remind our readers, that whatever things of this kind are really wanted, independent of gap-filling, must be got out forthwith. If the allotment man has room to spare, he may plant a few Broccoli plants, which he may, doubtless, obtain from some good-natured gardener. He should obtain some for autumn use, as the Cape and Cauliflower; some for mid-winter, as the branching Hammond, Snow's, &c.; and some for late-spring, as the Portsmouth, the Wilcove, &c. Rich soil is necessary, and they must not be nearer than half a yard apart; the Capes will do with two or three inches less.

Coleworts.—Those sown in the middle of June will now require getting out. We have before observed, that if the Matchless kind (true) is used, they may be planted in beds about seven or eight inches apart. Thousands may be thus produced, and this is the very period in which to plant them, in order to be profitable, for they will sell well about Christmas, bunched and taken thus to market as the London market gardeners do. In growing such short-lived crops, we never dig very deep if in beds. A little manure is spread over four-foot beds, and then forked in about six inches, well mixing it. The edges are then thrown over the whole, paring the alleys clean out. The roots of the plants have thus the manure well-blended, close to them for immediate action; and this is the best economy.

The *Savoy* is a useful green if the soil be good, otherwise they are not profitable. Indeed, from the circumstance of their spreading so wide their lower leaves, they are never so profitable for home consumption as some other greens. They are not very hardy, and, under these circumstances, we cannot press them on the cottager.

Celery and Leeks.—These will soon want earthing-up, and liberal waterings will be necessary. They are both cultivated alike, or nearly so.

Scarlet Runners.—As soon as they approach the top of the sticks, their heads must be pinched; these require abundance of moisture.

Herbs must be cut forthwith, and placed thinly in an out-house or room possessing a slight circulation of air, but out of the sun; indeed, if somewhat dark, so much the better. As soon as dry, or nearly so, let them be pressed close in an old box, and fastened down so as to exclude air and dust.

Seed Sowing.—About the tenth of August is a capital time to sow cabbage to prick out in beds for spring planting. Choose the Matchless kind principally. **Cauliflowers.**—If

needed, sow about the twenty-fourth, on a warm and elevated bed. **Onions**, to stand the winter, sow in the second week. The Lisbon and the Welsh, perhaps, the best. **Lettuces** to stand the winter, sow about the twentieth on elevated beds, choosing the Bath Cos and the Hammer-smith cabbage kinds. **Turnips** (common) to go through the winter, in the first part of this month. We prefer the Dutch and the Stone. **Spinach** to stand the winter; sow in first week, choosing the prickly kind. Rich soil is necessary.

Manures.—Let us again impress on the reader the necessity of looking well to the increase of his manures. From this period until the middle of October, every ditch and hedge-back teems with materials capable of augmenting the manure heap. If any part contains seeds, let it be got into a body, and partly charred before adding it to the manure heap. Shut up with a suffocating smoke, and a temperature of about 150°; in a few hours every living thing, seed, or insect, will be destroyed. It may then be added to the dung-heap and soiled over.

R. ERRINGTON.

APIARIAN'S CALENDAR—AUGUST.

By J. H. Payne, Esq., Author of "The Bee-keeper's Guide."

SWARMING.—In this neighbourhood, swarming, as I anticipated, has been unusually late, and, consequently, very little or no honey can be obtained from swarms this year. Where swarming is considered desirable, it is very important that it should occur early in the season. The swarm of the twenty-second of May, which I mentioned in my last calendar as being the first I heard of, has filled its hive and a glass of ten pounds; besides which it has thrown off an excellent swarm (by no means a desirable thing to happen), and this swarm has nearly filled its hive, and will probably work up, also, into a glass, for the great harvest of the lime trees is yet to come. Now, what an extraordinary advantage this swarm has had above those that came in the middle, and at the end of June; for the latter will not be able to store more honey than will be required for their winter consumption; and many of them will, in all probability, want a supply of food to carry them safely through the spring.

EARLY SWARMS.—Now, as early swarms appear to be so very desirable, it may be asked what are the most likely means of insuring them? And, in reply to this question, I would say, leave the stocks rich in store in the autumn, the contents of each hive weighing, at least, from twenty to twenty-five pounds, and let the population, also, of each hive be very numerous; if it be not so, add the bees from weak hives to it.

Forcing Swarms.—I was very desirous of getting a swarm from my own bees this year, to stock a set of new boxes which I am very anxious to test, and after waiting till the 28th of June, expecting daily to have one, I could wait no longer, and decided upon forcing a swarm, which I am happy to say is doing remarkably well, and so is the stock. The process is most simple, the danger none (for I did it without any protection), and the time occupied not exceeding a quarter-of-an-hour altogether. The method adopted was this,—At noon (the day was bright) I took the stock hive to a shaded part of my garden, turned it bottom uppermost, and then placed upon it a new empty hive of the same size, and immediately commenced a continuous gentle tapping with two sticks upon the bottom hive,—in much less than ten minutes the whole population had ascended into the new hive, when I immediately placed this newly-peopled hive in the exact position the old one had occupied, and, consequently, all the bees that were out at work entered it on their return. The old hive I carried about twenty yards another way, and, upon inspecting it, I found it to be so completely depopulated, that I was obliged to restore it to its old place for about ten minutes, that some of the bees might return to it. In removing this forced swarm in the evening to the boxes intended for it, I found they had worked two pieces of comb, each one above five inches long, so little did they appear annoyed by this unceremonious treatment. Both swarm and stock are doing remarkably well; the latter has pretty well made up its numbers, and will probably send out a second swarm. It may be as well to say that in forcing, or driving bees from one hive to

another, that the hives or boxes should be of the same size.

Dressing Hives.—It would be well if this practice was discontinued altogether, for when done in the most judicious manner, the bees are greatly annoyed by it; a clean, dry hive is more pleasing to them than one besmeared with ale, honey, fennel, and all the other good things used by good dames of old. Within the last week I heard of one having been washed, or smeared with cream and sugar, and in so profuse a manner, that the bees which had to travel an hour by rail were found at the end of their journey to be completely saturated with it, a large portion of them dead, and the remainder in such a state as to render it necessary to kill them the next day, to the great vexation and disappointment of the gentleman to whom they were sent, who has been impatiently waiting their arrival for some weeks. Cream I should imagine to be the most disagreeable thing that could be thought of for this purpose, except it should be oil, which is well known to kill a bee, or almost any insect the instant it touches it, and this cream I believe was some of the far-famed Devonshire, which in its rich and buttery nature approaches very closely, indeed, to oil.

TRANSACTIONS OF THE HEN-YARD.

AUGUST.

On the choice of Cochín-China Fowls.

THE beautiful variety of poultry at the present time so much admired and sought after under the name of Cochín-China fowls is, from all I can ascertain, chiefly brought from a place much farther north than that country; all the imported birds which I have met with having arrived in ships from Shanghai. Even these are not invariably true to the sort, some of them bearing signs of a mixture of the Malay blood, which is perceptible from the greater length of leg and neck, and the small size of the comb; these are, nevertheless, fine sized birds, and are often feathered down the legs.

I will, to the best of my ability, describe what experience has led me to consider the most important points by which an amateur may choose the true-bred Cochín-China fowls. In writing this description, I take the portraits of some English-bred birds which I obtained, after much search and hesitation, among all the fine stocks which I could hear of; and, also, of a splendid bird (now in my possession) imported from her own country; nor have I confined my pen entirely to my own stock in giving this description (which it is my wish to render plain to all); but have also regarded the opinion of those who possess the choicest collections, as well as that of those whose voices have decided the prizes at the poultry exhibitions. Size is quite a first consideration; the bodies are large, plump, and square built, with a peculiarity in the wing, which I cannot better describe than in the words of Mr. Richardson: "the wing," says this intelligent author, "is jointed in such a manner, that the posterior half can be doubled up and brought between the anterior half and the body;" this makes the wing look very small, completely conceals the pen feathers, and gives something very peculiar to the general appearance of the fowl.

The plumage is bright in colour, and very soft to the touch. Buff, yellow, cinnamon, and grouse, are the colours which prevail; among these, the light colours, buff and yellow, are, I think, most admired at the present time. The feathers are peculiarly soft to the touch, and extraordinarily long and downy about the thighs, which stand out and give a great appearance of width to the fowl when seen from behind. The head is neatly formed, with short bill, red cheeks, and single, serrated comb; the comb rather large in the cocks, medium size in the hens. Wattles rather large, and double in the cocks, small in the hens. A full, pearly eye, and no top-knot. The legs yellow, tinged with red, stout made, and not too long, with a stripe of feathers down one side. Their eggs are of a medium size and delicate flavor, with shells of a pale chocolate colour. The tail in both cock and hen is remarkably small. I had almost forgotten to mention the crow of the male bird, which is a long melancholy groan of so peculiar a sound, that I have by it even found out their locality.

They should not, on any account, have a fifth toe, although

I am informed by quite the first dealer in London, that this will sometimes appear from repeated breeding-in, without any mixture of the Dorking fowl. I have never, however, seen an instance of its appearance, in which the chickens were not fully entitled to the distinction by right of inheritance. The feathering on the legs to which I have above alluded is, I think, a great beauty, but I do not find that it is considered imperative by the most experienced connoisseurs; for even where it is distinct in both cock and hen, it will yet occasionally be absent in some of the chickens. It is objected to by some, who consider that the damp which adheres to the tufts of feather about the feet may injure the fowl in our cold climate, and by these persons the clean legged birds are preferred.

The young chickens grow fast, and, like all high-bred fowls, fledge very slowly. At six weeks old, they have often not feathers enough to enable them to fly to a place one-foot-and-a-half from the ground without great difficulty. At between two and three months they look like little ostriches, for the very few feathers which there are in the tail curl downward.

On commencing this chapter, I had proposed to write on the "choice and management of the Cochín-China fowls;" but space will oblige me to confine myself to the first of these subjects, especially as a correspondent of THE COTTAGE GARDENER has proposed some questions of general interest, which I have much pleasure in answering. He wishes to know whether it is better to purchase Cochín-China fowl's eggs, or the chickens. Now that the season is far advanced, I should say chickens, most decidedly; for, although I have seen handsome birds which were hatched even as late as October, I do not think these ever become so large as those from spring broods. All the persons I know who have the finest Cochín-China fowls, are most unwilling, or refuse to part with eggs, on account of the mismanagement and subsequent complaints of the purchasers. At the same time, I see no reason why, at an earlier period of the year, success should not attend the purchase of eggs, provided the purchaser can see the fowls which laid them, and be assured that they are genuine. Eggs are certainly subject to injury from travelling, but I know, by experience, that this evil may be guarded against by careful packing. In rather recommending the purchase of eggs, however, I fear I speak more from conviction than from experience, for I have seldom been fortunate with bought eggs. Their price I find to vary from twelve to thirty shillings the sitting.

The price of fowls, when fine and the true bred, I have found to be two pounds and thirty shillings respectively, for well-grown cock birds and pullets. On seeing Cochín-China fowls advertised for much less, I have often taken the trouble to apply, but have in these cases invariably found either half-bred or small birds; I do not know whether this is generally the case, or whether I am less fortunate than my neighbours in realizing bargains. The price of chickens is, of course, much lower than the sum which I have named as usually charged for grown cock birds and pullets, but these I have never, at present, bought, as when, after my repeated disappointments, I tried in desperation to see all the finest I could hear of, I only sought those which had already reached maturity.

I omitted to remark, in its proper place, that the colour of the eggs must not be implicitly relied on, as half-bred fowls will sometimes lay eggs very similar in look to those of the real Cochín-China fowls.

ANSTER BONN.

STRAWBERRY CULTURE.

"We wish some of our ingenious (I could wish this word ingenious more applicable to myself) amateurs would take up such matters, and faithfully report on them." Thus Mr. Errington expresses himself in his article on the fruit-garden, relative to strawberry culture in THE COTTAGE GARDENER of July 3rd.

Now, I consider myself one of your peculiar people, a cottage-gardener in the true and literal sense of the word; and if anything new or useful can be derived from my practice in strawberry culture, as I here detail it, the presumption of my mite as a contribution to your ever-

welcome-to-me, and generally, I should conceive, useful periodical, will, I hope, be atoned for, notwithstanding the great deal of matter already known which it may contain. The site I choose for my strawberry ground is that on which either my early peas, potatoes, or cauliflowers are grown; these come off about this time, July 12th, and allow me two months to well trench, manure, and pulverize the soil. I invariably, in trenching (two feet deep for strawberries), keep the bottom spit down, and if I can get it, I use a barrow-load of manure to each square yard of ground, mixing it equally through the whole body of the soil. I allow the soil to lay as rough as possible, after the first trenching, for a month; I then trench it again, but this time add no manure, leaving the surface, as I proceed, quite rough, in order that the sun and air may act upon it as much as possible. It will settle down nicely by the middle of September, at which time, on the first favourable rain, but not till then, I place out the young plants for good.

I keep a few plants of each kind of strawberry I cultivate in a distinct part of the garden, these I term my breeders, from which every runner that appears is carefully pegged down the moment it shews a leaf, and so on till such time as the required quantity is provided; those which appear after this on the mother plants I cut off without mercy, and they accompany the refuse to the dung-pit, as well as every fresh runner that attempts to shew itself from those previously pegged-down. I have now an abundance of healthy runners rooting, they will be ready to prick out in about 10 days; and I intend them to occupy a site now taken up with a row of Bishop's dwarf peas, which will be off the ground by that time.

So soon as these peas have done bearing, the ground will be well forked,—a tolerable sprinkling of rotted manure added, and the young plants pricked out thereon, nine inches apart. I take them up carefully from the ground on which they are pegged down with a garden trowel, allowing as much soil as will cling to them to do so, though in this operation I like to cut off the points of the young roots in moderation, as this induces them to send out fresh roots nearer home.

After they are pricked out (in which operation I am careful not to bury the crowns), I keep them well watered until they have taken good root, I do not let them produce a single runner; and, of course, all weeds are eradicated from amongst them as they appear. I keep the ground repeatedly scarified.

This brings us, we will say, to the middle of September, when, on the first wet day, even if a thorough drenching should be the result, I plant out the strawberry.

The kinds of strawberry I cultivate are *Keene's Seedling*, the *British Queen*, and *Elton*. I allow them to bear two years and then invariably dig them down, at least, this was my practice when I lived in the vicinity of Ludlow. I was not acquainted with the *British Queen* until I came here (Woodstock), and I find, after three years' familiarity with this sort, and on this soil (a gravelly loam), I must propagate new plants yearly, as I find the two-year plants are apt to die away just before they arrive at their blooming state; and so far as my knowledge of them goes, I cannot prevent their doing so, nor can I find out any assignable cause for their decay. The yearling plants with which I filled up the rows last year are healthy, therefore, it cannot be supposed that the severity of winter has, in this particular case, anything to do with it; with the latter and former kinds I shall pursue my old two-year system of cultivation.

My distances of planting-out are, for Keene's seedling, 1 ft. 6 in. between the rows, and the same distance between the plants; *British Queen* and *Elton*, 2 ft. between rows, and 1 ft. 6 in. between the plants. I allow an alley extra of one foot between every two rows of plants.

At planting-out time, I take up the young plants from the ground on which they were pricked out, with tolerable balls of soil adhering to the roots; in this point I am very particular, and, of a necessity, the roots in taking up the plants become circumscribed a little by the action of the trowel or small spade (the latter instrument I generally use at this stage of the process), this mild mutilation still causes an increase of roots nearer the plants, and more useful members of them.

I prick out my runners as near the planting ground as

possible, in order that I may step a few paces, and deliver the plant directly off the small spade into the hole prepared for it; I need not explain the why and wherefore of this proceeding. I am particular in not burying the crowns of the plants, and in not mutilating a single leaf, if I can possibly help it. Attend to watering the plants a short time, if necessary; eradicate all weeds, and keep the ground, but, mind only the surface, stirred about them; do not take a leaf off from them until next March, and not then, even, unless the leaf is withered.

The beginning of next March;—many a cold, dreary day will have to be borne before that time arrives; many a store of knowledge laid up in those long winter evenings; and many a bushel of soot saved from the winter sweeping of our chimnies, for our strawberry grounds in the beginning of March.

Soot, mixed with an old cucumber-bed, is a top-dressing I always prepare for my strawberries. I mix it at the rate of a peck of soot to each wheel-barrow load of the said cucumber-bed, and the manner I apply it is as follows:—I shovel, or cause to be shovelled off, about an inch-and-a-half of the surface-soil flanking the first row of plants; this is wheeled and laid in a parallel line with the last row; then comes the mixture of soot and manure, which is spread two inches thick on the surface from whence the soil was removed. Now step between the next two rows of plants; shovel the soil off in a similar manner, spreading it evenly over the two inches of manure, which it will slightly cover, and prevent the escape of the nutritious gases of the manure, prevent its becoming dried by the sun and winds, and withal make a tidy appearance. Follow up this proceeding until the whole is finished; and the first soil that was removed will cover the last layer of manure. The rains will wash down the nurture of the manure just as the plants are coming into full life and activity, ready to take advantage of these good things.

So far, so good, till the blooming period, at which time, if it should prove dry, I give the plants a thorough soaking with soap-suds and water, about half-and-half and warm, once a week.

Our laundress, for years, has been in the habit of throwing her soap-suds away, I begged of her to allow it to be brought to me once a week, which she kindly acceded to. As Beau Brummel formerly said of starch, so I sing in praise of soap-suds, "It is the man," or, as we must say, "It is the *Strawberry*." It has an astonishing effect on fruit and vegetables, if given just as they are coming into production; and against blight, I think, my trees can testify it is equally good. My odd man, when I first began to send him for it, I fancied thought me a little crazy, but now he tells me that the suds which his old woman makes he applies to his own garden.

As the strawberries come into bloom, they will struggle to reproduce their kind in the shape of runners; these I treat as utter abominations; I go over, or cause to be gone over, weekly, every plant with a pair of sheep-shears, and clip off every runner in its infancy.

Now, in what manner to protect the fruit from becoming spoilt in its ripening process, is the subject on which Mr. Errington craves facts. It is a fact, I have tried tiles, straw, slates, short-mown grass, and have left the fruit to take its chance, and I like neither way. The tiles harbour the slugs beneath them, preclude the air and light from the soil, and all become damp and stagnant about them; slates are no better, but in addition become soon burning hot, or are in the extreme of cold; straw encourages the mice, which not only nibble the wheat which remains in it, but nibble off numbers of the berries also; short grass, in a wet time, becomes mouldy, and sticks to the berries as badly as dirt; and leaving the fruit to be dashed and splashed on the ground by every pelting storm, I found the most disconsolate proceeding of all. The idea of this with me coincides exactly with Mr. Errington, when he remarks on those good people who go to the enormous expense of building a garden wall, plant choice trees, and then, in the nick of time, and just as they would if they could, come into bearing, they allow the poor things to take their chance, and get no return for their money, or even the satisfaction of their garden looking decent. This is really allowing the "feelings to go before the understanding."

Certainly, if a man sets himself to think, it matters not if the object be small or great so long as he does think, and thinks to the purpose.

Where my employer formerly resided in Salop there was a great quantity of the shrub Snowberry (I do not know the botanical name, but I promise myself all these things when your Dictionary is complete, for I never dare take a book in by numbers, I always get so impatient for the remaining parts). The roots of these Snowberrys had ran along and intersected the shrubbery in all directions, throwing up suckers and forming, in some places, an almost impenetrable jungle; and the bright idea came into my head one fine day, that this stuff might be made useful in some way as to protecting my strawberries. I thought at first of spreading it entirely over the surface of the ground, but concluded that would be too gawky. A few hours after I was looking at some yellow salows, and the idea came upon me in a moment. The Snowberrys certainly would make nice little faggots, and long ones, too, bound round with some of these very salow twigs.

It was winter time; I set to work next day, and did not cease this employment till two hundred of these little faggots were completed; they were each five feet long, six inches in diameter, rather flat than round, and tied rather loosely with the yellow salow twigs mentioned above; the small side-spray, of which there was a profusion, was allowed to remain rather loosely about them; I placed them in a dry loft till the proper period of using them.

I placed these along side my strawberries about the time they were coming into bloom. I fastened each faggot down in its place with a hooked peg sufficiently long to steady it; for expedition, neatness of look, protecting the fruit from wireworms, slugs, and dirt; let the rain, however severe it might be, pour upon them, it could not injure them; they were either suspended in the air, or reclining on the sides of the faggots, and in ten minutes after the severest storm were perfectly dry, with scarcely a splash of dirt upon them. The rows of red berries exposed to view irregularly along the side-spray of the faggots have a rich and very pretty appearance. The plan perfectly satisfied me, and I intend to improve upon it another year. The faggots were taken up after the bearing-season was over, and placed in the dry, and would probably, and have, for all that I know to the contrary, lasted till this time. My employer came to this place the following spring (1848) before the strawberries came into bloom, and we found not a plant in this garden to faggot!

I had a fine flowery description given to me of this garden before I saw it; but, alas! what a "baseless fabric of a vision"—how supremely bamboozled was I. I found it a dreadfully worn-out affair, and almost as far off what it was represented to be as it is, to its Antipodes.

However, upon the principle that when a man's cart sticks in the mud, it is very little use calling on Jupiter for assistance unless he put his own shoulder to the wheel, I set myself to work.

The following winter found this garden very much resembling a gravel-pit.

I had the good fortune to meet with one of the best working labourers in this country, and he came to me with the understanding that he was to do as I wished, and not to argue on a matter, whether he thought it right or wrong (the man that I employ occasionally now comes upon the same principle, and it saves me an immense amount of time and argument); suffice it to say, the following spring found this garden under quite a new arrangement, with strawberries again in prospective.

The present time is the distance I then looked forward to; and brings me to a point in which I can explain the further improvement, hinted above, which I contemplated in Salop.

I have explained how I placed the small faggots along each side of the plants there; but as each of my plants are one foot six inches apart, there are interstices between each, which also require a something similar to the sides.

I find, in order to report progress "faithfully," which Mr. Errington insists upon, I must here make another digression.

I have no Snowberry undergrowth here to make faggots; and, in fact, being in a town, as we are, I have not got any wood at all but by purchasing.

Hereon hinges a tale of wants. I wanted small spray for making my faggots; I wanted dwarf pea-sticks; I wanted charcoal for potting purposes; I wanted wood-ashes when sowing my seeds; I wanted stout sticks for different gardening purposes; I wanted slender stakes and sticks for my flowers; I wanted stakes with forks, and pegs with hooks; I wanted something, after all this picking and choosing, to burn the large and small wood remaining over and above economically, and our household wanted home-baked bread. Now comes the explanation. This house has been in existence, according to the chronicles, this two hundred years, and most likely, for that period of time, its inhabitants have felt themselves dissatisfied with eating baker's bread—I know I did—and I did not see why, even if the house had existed so long without an oven, that it should do so any longer; the strawberries were at the bottom of all this—if wood was bought to heat the oven, the small faggots and all the other *et ceteras* would follow in the wake. A useless copper boiler was instantly turned out of the kitchen, and a nice little oven built on its site, at a very little expense, a convenience that we could not possibly dispense with; and yet see how the thing originated—merely because I found myself in a fix as to the strawberries. These are all mere trifles, yet in the aggregate they make a sum of human happiness. The small faggots I make here from the wood we buy are chiefly composed of hazel; they are four feet long, six inches in diameter, and, instead of salow twigs, I use tar-cord for bands; in the interstices between the plants I place loose sticks cut about one foot in length, and in sufficient quantity to keep the fruit well from the ground; the faggots I place exactly as heretofore.

Now, the last, and not the least, enemy are the birds: I defy them also. Their numbers are legion. My strawberries are so planted, that the old mended fishing-nets I buy of Mr. Richardson, at 1½d. per square yard, exactly cover two rows; up the centre of these two rows I drive some stakes (about one inch diameter, two feet six inches long) into the ground, allowing their tops to remain above the leaves about six inches—I place them from ten to fifteen feet apart; along the top of these stakes, which have a short natural fork on their tops, I strain a line of tar-cord—the forks at the top of the stakes being merely for the convenience of so doing. The net is now placed along the top of this, and strained down to the small faggots at the sides, which effectually secures it, and keeps it down in a kind of way that I defy any bird to gain admittance; and, in consequence of the net being suspended along the tar-cord above the plants, the foliage remains in its natural position, allowing the sun and air to penetrate and circulate in every direction without let or hindrance.

In gathering the fruit, it is merely necessary first to release the net on one side the two rows entirely; let it remain suspended on the top of the tar-cord, and gather the fruit off that row; then fasten down that portion of the net, and proceed on the other side in a similar manner. In unfastening the net from the faggots, the utility of pegging them down will be at once perceived.

The after-management of the plants that are to remain till another year claim my attention unceasingly. I keep them free from all runners and weeds, and the surface soil amongst them well scarified, but never on any account more than an inch in depth; as to cutting off a healthy leaf, fancy cutting off a little piece of one's own lungs! would it be possible to enjoy the full vigour of a constitution after that?—UPWARDS AND ONWARDS.

[We hope to hear from this correspondent very often; he is "a fellow of infinite humour," but a good gardener withal. The remainder of his communication shall appear shortly.—Ed. C. G.]

NOTES ON FRENCH GARDENING.

THE railway officials of France set us an example that we should do well more generally to imitate. At nearly every station between Paris and Tours, and on several other lines of railway, they have showy and neatly-kept flower-gardens; and during the stoppage of the trains, it is interesting to observe the pleasure which the passengers take in them; Roses, Valerians, Rockets, Antirrhinums, Stocks, Pansies, and a good selection of free-blooming annuals are mostly to

be met with. In truth, the French are fond of display; and this taste is probably aided by their climate, which appears favourable to the production of brilliant colours. Their gardens form bright spots in the landscape. At one of them I noticed a class of Pansies quite different in colour to any that I have yet seen in England; they were (if I may use the expression) tortoiseshell, and bore much resemblance in their tints and markings to our best Mimuluses—orange, red, maroon, lilac, and some almost approaching to scarlet, variously blended upon yellow grounds, were very conspicuous; the plants were healthy, free bloomers, with the flowers large and not deficient in form. Among the multitude of Roses, none produced a richer effect than Geant de Batailles and Baron Prevost. The Persian Yellow Rose was more closely pruned than with us, and its energies being concentrated, the foliage and flowers were decidedly finer.

Among the annuals, few were more dazzling than *Viscaria oculata* and *Schizanthus retusa*; they were in clumps or patches, the former covered with rose-coloured blossoms, rising about a foot high; the latter displaying large obtuse spikes; but the three great drawbacks to French gardens are their straight walks, stiff symmetrical beds, and the absence of good gravel.

At Tours, in one of the nurseries, was a large bed of Sweet Williams, quite a march upon those hitherto grown, they were of nearly all hues, and the flowers, instead of being flat on the top, assumed the form of the Normandy Candy-tuft, having large round heads inclining to be spiked, each head being double the usual size. The owner had no seed left, and to use his own phrase in reference to the collection, they were "*Le premier choix*."

In the vicinity of Paris, few villages offer a more enchanting display of hill and dale, vineyards and orchards, fields and gardens, interspersed with small detached country houses, than Fontenay aux Roses; oblique paths to the tops of the different hills conduct the loiterer through a succession of well-cultivated allotments; these are without hedges, and acres of strawberries and other fruits appear unprotected. It was a beautiful summer evening when I wandered through them, and conversed with the labourers; files of women and girls, with heavily laden baskets of fruit upon their heads, were wending their way to the village, or the railway station; and numerous merry groups were seated under the trees enjoying their evening meal, whilst parties of pleasure strolled in the distance towards one of the public tea-gardens, from whence issued sounds of music. The vines appeared remarkably healthy, and though not more than three feet high, were thickly covered with bunches of fruit, and gave promise of an abundant vintage.

Of the flower markets of Paris, I would only say that there are five, and each is held twice a week. No provincial horticultural exhibition in England that I have yet seen pleased me so much as these markets; the best, perhaps, is that near the Madeleine. Flowers in endless variety, and of nearly every form and colour, together with rich bouquets, attract numerous purchasers; the former are brought mostly in pots, and each is partially enclosed in a neat white paper envelope. But there were two descriptions of flowers to which the French appeared very partial, and one of them I had been waging war with for the last fifteen years to keep out of my garden; it was what we call the *White May Weed*, and the French the *Summer Chrysanthemum*; they are usually grown in large pots, make a great show, and serve to enliven the dark inner courts of many of the houses. The other was a *Myosotis*, or *Forget-me-Not*; very diminutive in its flowers, of a light blue, with a yellow metallic eye. These, I was assured, grew to the height of two feet, and when in full bloom the masses of little heads are cut off, with about three inches of stem attached, and inserted in pots, so as to form a round ball resembling innumerable pins stuck in a light blue velvet pincushion. If my memory serves me, about £25,000 a year is taken in these markets by the sale of their floral productions.—S. P., Rushmere.

HARDY BORDER FLOWERS.

Silene compacta.—This is one of the most beautiful of the whole genus *Silene*; it is a biennial, and a native of Caucasus. The whole plant is of a glaucous (milky-green)

hue, and rises from about eighteen inches to two feet in height, depending upon the soil and situation the plants are growing in. It flowers from the beginning of June to the middle of July, and a very profuse bloomer it is. The flowers are produced in large umbellate heads of a reddish-pink colour, and are particularly useful and showy for nosegays. The whole plant is strikingly beautiful.

Silene armeria.—This kind is very closely allied to the preceding, the whole plant being of a glaucous hue, and its flowers of the same colour; but it is more branching, and produces much smaller and looser heads of flowers, though equally pretty. It is an annual and an English plant, but deserves a place in every garden, for, like *compacta*, it is a useful nosegay plant. It may be sown in the open ground at the end of March or beginning of April.

Silene pendula is a very pretty little bushy plant, and a profuse bloomer when grown in a poorish open soil; and from self-sown or autumn-sown seed the plants flower very early in spring, which makes them very useful. The flowers are pink. It transplants readily, and if only a single plant is found (at the time of dressing of the borders, whether in February, March, or April), it may be taken up with a little care, and planted as an intermediate to the other hardy border plants. It will branch and flower and be very showy for a great length of time, or until it will be necessary to cut it away to make room for others. Almost any kind of annual, with a little care, may be transplanted in the early spring months, when the borders are being dressed off; and from their being taken up with a little care, and planted out singly, or two or three plants together, in fresh places, such plants not only make the best specimens, but come into bloom at such a useful season as May and June. The difficulty is to *know* plants in the *young state*, so as not to cut them down with the hoe, or to dig them in with the spade. I never allow any person, however well-experienced he may be, to either hoe or dig a flower-border until I have had my own eye over it, and should I see any young plants or suspect something will come up, I, as a warning mark, draw my finger round it, or I take up such self-sown seedling plants, and pot them into suitable sized pots. Such plants are sure to be useful at some season or other. Of the *Silene compacta* I have not sown any seed for many years, but always find sufficient of self-sown to take up about the flower-borders during the summer months, and pot them into small pots, either one or two plants in a pot, and as many pots as I think I may like to have of it;—such plants are shifted into a larger pot towards September, if they require it, as the plants are wintered in pots, and turned out between the other hardy plants after the borders are dressed off in the spring. I treat many things in this way, whether annual, biennial, or perennial herbaceous plants. When any plant is taken up in the hot summer months and potted, the pots are placed in some cool situation, and in a sheltered situation for winter.

Silene Shaftii.—This is a neat little bunchy plant suitable to either the rockery or common border. It is a hardy perennial, from six to eight inches in height, and bears pink flowers in August and September. This plant sows itself about, and though it may be increased by root-division, yet the best mode of propagation is by seed, which it ripens freely.

Silene alpestris is another pretty little rock-plant, flowering in June and July; colour, red. It is a good rule to always have a plant or two in pots for winter protection of many of these little Alpine pet sort of plants. The practice is but little trouble, to take off a bit or two with a little root of each kind, which may be done at almost any season, to be kept in the cold frame, or some such-like protection during the winter months: such plants are sure to be found useful in spring. Even if the winter has not killed the unprotected out-door plants, they may become so straggly and unsightly as to be better taken up, and a new one planted. By this method many choice plants are kept in the same garden for many years.

Delphinium consolida.—The tall, branching Larkspur is an invaluable plant in the flower-garden, particularly in the mixed flower-border. This plant is of all colours, from the deepest blue to pure white and variegated, and is even more useful than either of the perennial kinds, beautiful as they are, for it transplants just as well as a cabbage. Find a

self-sown plant wherever you will, at the border-dressing season, it may be taken up and planted again with the dibble in suitable places, after the borders are dug and made neat. There these plants not only flower early, but will, if well plucked from for nosegays (for which it is very desirable), continue to flower up to the end of the season, if not until Christmas; and the same plants thus flowering, will also mature a few pods of seeds during their season of growth, which, when ripe, should be collected from the plants; seeds may be sown also in beds or otherwise about the end of March, and in April. The plants rise from two-and-a-half to three feet high.

Hardy annuals.—The following are really first-rate among the very hardy kinds of annuals, and may be sown either in autumn or spring; that is, about the 12th of August, or during the month of April, and may be sown at both times in the open ground.

Godetia Lindleyana, light red; and *Rubicunda*, red; *Collinsia bicolor*, light red; *Erysimum Perofskyanum*, yellow; *Iberis violacea*, deep purple; *I. umbellata*, pale purple; *I. odorata*, white; *Gilia capitata*, light blue; *G. versicolor*, light blue and purple; *Clarkia pulchella*, purple; and *pulchella alba*, white; and *Fedia gracilis*, red. This short list are among the very best of the quite hardy kinds, and most useful for nosegay flowers.

T. WEAVER.

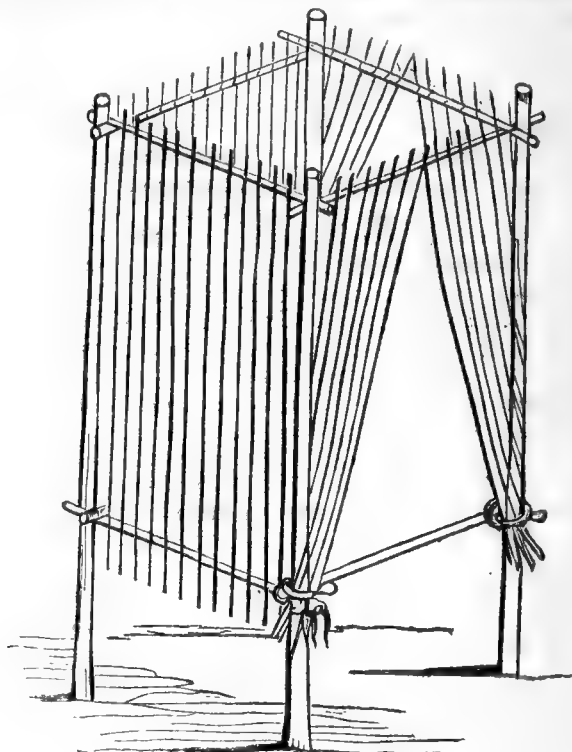
DEVONSHIRE CROPS—PEAR TREE SHELTERS.

As you desire to receive accounts of the fruit crops from different parts of the country, I sit down to tell you, with much regret, that such a fatal year in our gardens has not been known for many years. All our most desirable outdoor fruits, peaches, apricots, plums, and pears, were stripped of their produce by the hailstones of May, although at that time they were well set, and most of them of the size of peas. Of other crops we have a fair show. I was peculiarly unfortunate, for I had covered my peach trees and a considerable number of Mr. Rivers's pear trees, from the 1st day of February:—the bloom had been superb, and the fruit was well set when I removed the coverings in the middle of May, a few days before the hail-storms came and blighted my hopes for the year. No experience is so good as that which is dearly bought, and the first of June, please God, next year, shall still see my pet trees covered.

Mr. Rivers will, perhaps, be glad to hear through you that I have invented a covering for his dwarf trees, which has completely saved the fruit of my friends, who were wiser than myself, and kept them up till after the hail-storms; and, as I believe that it will enable the inhabitants of the more northern counties to ripen their pears with success, I will briefly describe it. Round the tree, I insert in the ground four stakes, just clear of the trees, when the buds begin to swell, and tie cross pieces at the top (leaving two or three inches projecting) to steady the others. On this top I fasten anything that will keep out the frost, canvass, old carpet, &c. I then procure some straw (reed we call it here) ready for thatching, and dividing it into parcels of eight or ten straws each, I tie these along a piece of tar cord (as you do the tail of a kite) within an inch of the cut end. I then hang the straw curtain all round the four stakes on the projecting points of the cross pieces, letting the head hang down, and to fasten this, I run round the four stakes, about three-fourths of the way down the straw, a piece of tar cord inside and then outside the straw, giving it a turn round each stake. By this means the straw and stakes are kept steady, and as the heads of the straw are not fastened together, I can open and shut these curtains just as I would bed-curtains, and tie them to the stakes to keep them open if I wish to do so. The great advantage of this covering is, that you may put it up in November, and have it there till June; ten minutes will open or shut the coverings of fifty trees; and the expense I calculated at about one penny for each tree of three feet high. I used for stakes the old scarlet runner sticks. The appearance is this, two sides being shown open, and two closed.

I have, also, hit upon a plan, by which time, trouble, and money are saved in fumigating plants, which I have proved to be highly successful. I remove the plants infected with green-fly to a shady part of the lawn, place them close together in the form of a parallelogram, pots touching;

drive into the grass five stakes, one at each corner, and one in the middle of all the pots, the exact height of the plants;



cover this with a wet sheet, and inserting Brown's fumigator under the sheet, fill the place with smoke; in three hours I uncover them, place them out singly on the lawn, water them with a little lime water to kill the green beasts on the surface of the pot, syringe them well all over with clean water, and replace them. As there is no spare room, and no smoke escapes, I find that one ounce of tobacco does for this, much more effectually than when I used to spend half-a-pound two nights running to smoke my greenhouse.

—PONSONBY A. MOORE, Bishopsteighon, South Devon.

A FEW DAYS RAMBLE AMONGST THE ROSES, IN THE MIDLAND AND NORTH-MIDLAND COUNTIES.

HAVING for twenty years been an enthusiastic cultivator and admirer of the rose, I am induced to send you, from my diary, a copy of notes recently taken by me on this most interesting of all flowers, while on a short tour in this part of the country.

We frequently hear of the far-famed Rose Gardens of Hertfordshire, and the great perfection in which they are there grown, but I have no doubt that many of your very numerous rose-loving readers, who are situated in the more northern parts of England, would like to hear what roses flourish the best in these less-favoured climates, for here many of the favourite Perpetuals, Tea, Bourbons, &c., flourish amazingly.

We confess we were most agreeably surprised when calling at the Rose Gardens of Mr. Godwin, of the Collycutt Nursery, Ashbourne, to find so extensive a collection, in so comparatively isolated a situation, amongst the romantic hills of Derbyshire.

Here we observed the far-famed *Geant des Batailles* in all its glory. Its extreme brilliancy, fine foliage, early and late flowering, render it one of the most valuable of roses; pegged down on its own roots for massing, or grown on two-feet stems, it is admirable. *Barrone Prevost*, and *Duchess of Sutherland*, were flowering remarkably strongly and finely; indeed, these two old favourites will take many new ones to beat them. *Pius IX.*, amongst this class of Perpetuals, appears a free bloomer; it is a large imbricated rose, nearly as large as *Prevost*, but the colour, a deep purplish crimson, by no means bright, has no beauty, and only novelty to recommend it. *Amandine* was flowering beautifully; this is really a good rose, well-worth growing, as also, *Sidone*, *Standard of Marengo*, a delicate grower, fine colour, and tolerably fine flower, but a little more than semi-double. We consider *Geant des Batailles* worth a hundred of it. *Duc d'Alencon*

is distinct and good. *Madame Lamoriciere*, also, was flowering most charmingly. It is a new rose, very distinct, and of the brightest pink; this *must* please the ladies. *General Cavaignac* was not sufficiently expanded, but it looks very promisingly. The varieties of this class are now become so numerous that a new one must be very distinct to be admissible. *Dr. Arnot* is pretty from its brilliancy, though small. *Lady Alice Peel* we could not pass without inspection, and a waft of its fragrance; and our old friend, *Mrs. Elliot*, caught our eye; and last, not least, *Madame Laffay* came in for some share of our attention,—our gigantic friend, *La Reine*, too, was not altogether unobserved; it does not, however, appear to open well, but when it does so, how fine is it!

Bourbon *Madame Angelina* is quite a gem, but a very delicate grower. *Bouquet de Flore* was beautiful, and one of the very best abundant autumn bloomers. *Prudence Raeser*, with its very double and unique lilac-rose-coloured flowers, in immense bunches, was very good. This I find with me is one of the most profuse autumnal-blooming roses I am acquainted with. Plant this with *Madame Desprez*, *Bouquet de Flore*, *Jean de Arc*, *Noisettes*; *Gloire de Rosamonne*, *Pierre de St. Cyr*, *Bourbons*; *Queen*, *Geant des Batailles*, and *Fellenberg*, *Noisettes*, and on my credit as a rose-grower, I guarantee any lady a bouquet of the queen of flowers, from the 12th of June, until the chills of approaching winter arrest the expansion of their blooms. Mr. Godwin also informed me, that these all stand well with him, and bloom most profusely when the beauty of nearly every other rose is passed away.

It is a difficult task to enumerate Bourbons amongst so numerous and beautiful a family, there are so many claimants on our admiration. We noticed three or four as very distinct, *Comice de Seine et Marne*, *Menoux*, *Souvenir de la Malmaison*, and *Vicomte de Cressy*.

China and Tea roses do not stand this climate in the open border without much care. We observed a capital method of growing them here, which Mr. Godwin favoured me with, and which I give for the benefit of your readers. The bed being marked out to the desired dimensions (the subsoil being a retentive clay), the earth and clay were taken out to the depth of about two feet six inches, placing drain-tiles at the bottom, on which, and all over the bottom, faggots, in bundles of about one foot in diameter, were placed; on this about equal portions of rotten turf, road scrapings, and decayed manure were deposited. In this preparation, Tea-scented, China, and Bourbon roses were planted in May, 1848, and appear to thrive admirably. They are protected with spruce fir boughs in severe weather. The Teas partially die down in winter, but push vigorously each subsequent spring.

I would here just observe, from twenty years experience, and in many instances dearly bought, I have found March and April the worst months in the whole year for getting roses in pots from the nurseries. The probability is that, in nine cases out of ten, the plants bought have been protected under glass, and the consequent premature activity of the juices entirely unfits the plants either for carriage or planting out; and the destruction of many is almost certain. November, May, or June, I find decidedly the best months for all roses cultivated in pots; and March and April the most destructive, generally speaking, for every description of rose in cultivation.

I observed that both the *Yellow* and *White Banksia* roses had bloomed in May in five-inch pots. I have been often surprised and disappointed at not having yet seen a good specimen of these shown at Chiswick, or the Regent's Park. What could be more beautiful than a dome-shaped mass of these interesting varieties exhibited in a pot, covered with their charming bunches of pearly white, or golden yellow flowers?

Amongst hundreds of fine summer roses, we particularly noted the following as really distinct and good.—*Chenedolle*, *General Allard*, *Hortensie*, *Alba Achille*, *Paul Ricaut*, *Bouvet*, *Blairii No. 2*, *Madeline*, *Princess Clementine*, beautiful white; also *Madame Plantier*, and *Madame Legras*, snowy white; *Coup de Hebe*, *Persian Yellow*, *Leopold de Beaufremont*, *Prince Albert*, and *Stadtholder*. These, from having also grown most of them myself, I consider the cream of summer roses. I have also another paper of notes on the best

method of growing the *Cloth of Gold*, and other shy-flowering roses, from practical observation; also on several novelties of recent importation from Belgium and China. Should you consider them at least worthy of a corner in your capital publication, I shall be happy to communicate them.—AN ARDENT AMATEUR AND CONSTANT READER.

[We shall be much obliged by your proffered communications.—ED. C. G.]

DOMESTIC HINTS.

It is rather late to answer your correspondent of May 1st, "Legcolium," but if he has not already obtained the information, he may be glad to know that an experienced house-keeper says that *crumbly butter* is owing to its not being thoroughly separated from the butter-milk, and that butter is always most in this state, when it is long in coming, but may always be made to bind properly, by having the butter-milk dissolved out of it, by washings in many waters, and by squeezing it out, by persevering in breaking it till it is of proper consistency; she says a marble slab is the best place for this last operation.

You have sometimes published papers, recommending *Oatmeal* as an article of diet, both cheap and nutritious, more so than wheat-flour, according to your taste, and on other authorities; perhaps some of your correspondents may like to know, that in default of a girdle, the common iron oven by the side of most kitchen fires, dries (for it is drying more than baking that it needs) oatcake extremely well, and even the flat top of an ironing stove would answer the purpose. The less the oatcake is browned, or changed in colour by the baking, the better.

A variety of oatcake, to some palates even more excellent than the cake made in the usual way, is produced by making up the dough in the shape of a roll pudding, in circumference the size the cakes are wished—of course very large would be unmanageable—it is then cut into slices of the desired thickness, the difference produced by the rough surface thus obtained, and the closer and smoother substance resulting from the ordinary rolling out, is greater than would be imagined without experiment.

I find I save about 1s. 3d. of the price of oatmeal, by having a bushel barrel from Edinburgh, where it costs from 10d. to 15d. per peck (a month ago 10d.), the carriage per steamer to London is 2s. 6d. for this quantity, and the meal being, I suppose, fresher from the greater demand, keeps good in a good dry place to the end, say two months, while the London "true Scotch" will not keep a fortnight. Few people are aware how short a time bread-stuffs will keep, specially undried English oatmeal. When groats, &c. turn acid, and disagree as they generally do with weak stomachs, and (according to your correspondents) with chicken, it is because they are not fresh, and fermentation was begun—a fact which, in all preparations of oats, may be invariably detected by the presence of the hot, bitterish taste, which is so common, that most people believe it to be a natural and inseparable characteristic of the oat, but which is never present till it has begun to turn rancid and unwholesome. In its very early stage, the taste produced is as if a small quantity of ginger had been added to the meal, and is far from being unpleasant. I do not suppose a packet of groats or oatmeal is to be found in any country shop entirely free from this symptom of staleness; and I know it is difficult to find it in London, even in Scotch oatmeal, which, from being kiln dried, of course keeps longer than our English meal.

The difference made in meal by this drying process is highly exemplified in Stafford's American ground Indian meal, which keeps perfectly good for months, without even ordinary care in storing it, while the English maize-meal is perhaps more perishable than any other ordinary flour. Perhaps it may be useful to some of your correspondents to know, that Inglis's English maize-meal costs 2½d. per lb. retail; Stafford's ditto, in paper packets of 7 lbs., costs 2d. per lb. only; while in casks of 198 lbs. it costs but 6s. 4d.—that is, about 1d. per lb.; while the English costs 18s. 6d. per cwt., or about 2d. per lb. wholesale,—so for once the best article is the cheapest. For pig-feeding we have found half maize-meal answer admirably, only it was troublesome, its weight making it always sink to the bottom of the wash;

this can be obviated by the *dry* feeding your correspondents have recommended. For household purposes we have only found Indian meal an improvement in pie-crust; where used half-and-half with wheat flour it is excellently short and sweet. It also makes very well-flavoured cakes, or rather biscuits, after the fashion of oateake, with the same proportion of wheat flour; but they are excessively hard, so much so as to be tolerated by none but those who are compelled for health to live on farinaceous food, and require a variety and change of material and substance. Bread made with it and half wheat, from an American receipt, is very heavy and clammy, but so was the barley bread made by the same cook, whose wheaten bread is very excellent.

Carbonate of soda is very commonly used by pastry-cooks and others, with or without yeast, to lighten bread, cakes, &c. It is well to know that *carbonate of ammonia* answers exactly the same purpose, with this advantage, that it is entirely driven off by the heat in the baking, so that it is never taken into the stomach; nor is there any fear of giving the dough an over-dose, except on the score of extravagance, while soda is liable to both these objections, and is like all substances medically powerful, most injurious when taken habitually.

It seems absurd in me to attempt to second a recommendation for such authorities as your contributors, but there are a mass of people in the world who possess knowledge, and even love the pleasure of acquiring it, yet are too supine to take the one further step, without which knowledge loses half its value. It is in gardening, as in morals, the nine know, the one practices. It is therefore well, if possible, to shorten this difficult step, and, therefore, I would suggest a simple means of *double-potting* plants on such window-sills as are furnished with a little iron bar to steady the pots, or with many, as nursery windows. Fill the space enclosed by the bar with damp moss, sink the pots in it, and keep the moss watered. The moss may be prevented from being blown away by a sheet of brown paper placed round the inside of the single bar and projecting upon the sill, under the pots and moss, to steady it. Where there is more than one bar, packthread laced across them will confine the moss. These are very humble and inelegant suggestions, but they are not troublesome or expensive; and many people will try the effect of this who would not attempt anything more elaborate; while the effect produced on the plants would be such that the owners would hardly fail to go a step further, for, as before implied, "*c'est le premiere pas qui conte.*" The first improvement would probably be substituting a piece of netting for the laced twine, and then this would be painted to preserve it. The brown paper, too, would get a coat of dark paint on both sides, and so be made both more durable and slightly, amply sufficient for all purposes in the attic London story. While the young lady on the next floor would probably extend her improvements to a wooden box to enclose her pots and moss (not to grow her plants in), and end at last, perhaps, by getting leave to fit the drawing-room window with one of Mr. Beaton's ornamental cases.

I think it would much raise the average and standard of gardening, if you great gardeners would give such little hints. It is such *trifles that make the cottager feel you his friend*. Prosperity, when the fruit of exertion, naturally and laudably results in *ambition*—may it never produce *pride* in the cottage gardener. That it may increase and abound, none desires more heartily and gratefully than—A LOVER OF FLOWERS FROM CHILDHOOD.

TO CORRESPONDENTS.

DOUBLE YELLOW ROSE (*A Subscriber*).—How to bloom this old rose to perfection has hitherto baffled all the science and practice in gardening everywhere. The truth is, you know just as much about it as any of us. It does very well in some situations, blooms freely, and remains healthy for no one knows how long, but in other places it does not flourish under any treatment. Suckers from it will grow readily enough if removed in October or February. The only suggestion that we can offer is this:—Bud the Manetti rose with the Austrian or Persian yellow roses this season, and next year, bud the double yellow on young shoots from these Austrian or Persian buds put in now; or you may put buds of your double yellow at once on the Manetti, but, of the two modes, we would prefer that of double working. This is a good time to make layers of your dark rose; put a little sand and leaf-mould round the layer to facilitate the growth of roots. You had better not disturb either of your *Begonia* pots till the end of the season; unless the two smaller plants were close to the side of the pot, you could not remove them without

checking the principal plant. Any of the early kinds of *Cabbages* recommended by Mr. Barnes will answer your purpose to sow now.

CLIMBING ROSES (*W. R. J.*).—The cream-coloured climbing rose, which "does not comport with the white colour" on the front of the house, is, we think, *Jaune Desprez*, and if so, it is the very best in England for that situation. Such a rose as you want is not yet in existence. "A dark, rapid-growing, evergreen climbing rose, and if a perpetual all the better," would be quite a fortune to a nurseryman. The crimson Boursault comes the nearest to what you require. We have stated, often, that all our best climbing roses are either white or some shade approaching to it. Try the crimson Boursault, strong three or four years old plants, *not in pots*, but from the open ground; plant at the end of October, and water well next summer. It is a charming rose, and almost all the Bourbons and hybrid perpetuals will grow on it freely if you bud them on moderately strong shoots.

RHODODENDRON AND PEONY (*W. J. W.*).—Your soil is too light and hot for the rhododendron, and also for the peony; the latter will flower probably when it is more established, but there is little chance for the rhododendron unless you could cover the ground all round it with a mulching of moss, and give it water in dry weather.

IXIAS (*Ibid.*).—You have treated them right so far, and unless you had allowed them to get too dry, the bulbs must have been weak, and badly grown the year before, as no plants flower more freely than they if rightly treated.

WHITE WATER LILY.—Mr. Lockhart, florist, 84, Fleet-street, says, "Early in March last, I purchased some roots of the White Water Lily. In order to keep them in condition, I put them in a copper filled with water; the copper is fifteen inches broad by eighteen inches deep, and is in a dark back kitchen. Some of these roots were not disposed of at the proper season. This day I went into this kitchen, when, to my great surprise, I found one of the Water Lilies in perfect flower, with the usual pure white and rich yellow centre. The flower is three and three-quarter inches in diameter. Have you ever heard of Water Lilies blooming under such circumstances before?" We never before heard of *any* plant, except some of the fungi, making such progress in the dark.

LILIUM LANCIFOLIUM (*Rev. J. S. L.*).—The change from the greenhouse to the open air has been too great for your *Lilium lancifolium*, and is the cause of its not flowering. Let it remain where it is till autumn, then cover it up with dry ashes, and set a hand-glass over it till spring. It will come up strong, and flower well. The hand-light must be removed as soon as the frosts are over, the ashes taken away, and a thin mulching of decayed litter spread over it.

TEA-SCENTED ROSES (*Ibid.*).—These have been turned out in the borders from your greenhouse, and you wish to know if they require any protection through the winter? Certainly; and the best protection is some fern branches stuck in round the plants and tied together at the top, so as to form a kind of tent; or, if fern cannot be had, procure some long clean straw, and fix it round them in a similar manner. Remove the shelter as soon as the frosts are over, mulch the ground around them with short litter, and the roses will shoot strong and flower well.

ABUTILON STRIATUM AND SCARLET SEEDLING GERANIUMS (*W. D. Payne*).—Those do not flower because you keep them overpotted and too warm; cutting them back will not cause them to flower; but if they are, as we suspect, drawn and straggling, cut them back, and do not change the pots, but set them out of doors, upon a bed of coal-ashes, in an open part of the garden. This will give them strength, ripen the wood, and induce a flowering state.

DIELYTRA SPECTABILIS (*E. H. F.*).—You have saved some seeds of this fine plant, and wish to know when to sow them. It is an herbaceous plant, dying down in autumn. If the seed is sown now, the roots would be too small and weak to live through the winter. The best season to sow them will be the first week in March. They will then become strong before the summer is over, and will form strong roots to bear the rest through the dark months of the year.

BEES (*M. S. H.*).—It was "unwise to place the boxes one over the other," and more especially so if there is any communication between them; as, if so, fighting will be the consequence. The bee sent is a drone.

BEES (*B. B.*).—The reason why a *super* is placed between a small hive and a stock, is to give room, and so prevent swarming; for if the small hive was suffered to remain till sealed up, without giving additional room, the bees would, in all probability, swarm; besides, much time would be lost in finishing one and beginning another. If *bees work upwards*, brood in the supers is almost sure to be the result. *Artificial swarms* should be made in about ten days after the first appearance of drones, but certainly not later than the middle of June. *Piping* is never heard before a first swarm. The old queen which led off your first swarm was unable to fly, and was lost, therefore your bees returned to their hive. Piping in that case would take place. The swarm and cast then came out together, led by a *young* queen, which makes it of more value. When *queens are thrown out*, it is certain there will be no more swarms. *Treacle* will not make good food for bees.

HIVE VENTILATOR (*W. W.*).—The sole object of Mr. Kitchener's "ventilated passage," as shown in the Crystal Palace, is to have the glass in which the bees are working removed some inches away from the centre of the hive on which it is placed, that the slightest discoloration arising from the heat of the hive may be prevented; this your contrivance, although very ingenious, will *not* effect. You cannot remove the board from the top of your cottage-hive without risking the destruction of the stock.

SKELETON FLOWERS AND LEAVES (*Ibid.*).—Our correspondent will be obliged by information how those in the Great Exhibition were prepared.

YELLOW ROCKET.—Will the correspondent who offered slips of this, oblige us by sending his or her address?

STRAWBERRY BEDS (*Rosa*).—It is very bad practice to replant with strawberries old strawberry beds; and you had much better plant your young strawberries anywhere else. You can have *THE COTTAGE GARDENER* from our office weekly, by sending an order to Messrs. W. S. Orr and Co., 2, Amen Corner, Paternoster-row.

BEE BOOKS (J. P. B.).—The new edition of *The Apiarian's Guide* may be obtained of Messrs. Groombridge, Paternoster-row; and *The English Bee-keeper* of Messrs. Rivington, St. Paul's Churchyard. We suppose that the latter may be had free by post for five shillings, and the other for four shillings.

NAMES OF PLANTS (C. Y.—, Windsor).—No. 1. *Loasa hispida*, we think, for the specimen was too small for us to be certain. 2. *Malva crecana*. 3. *Periploca græca*. (Queen Mab).—1. *Veronica latifolia*. 2. *Inula salicina* (?). 3. *Hieracium aurantiacum*. 4. *Erigeron speciosum*. 5. *Campanula azurea* (?). (N. C. Horton).—It was quite impossible to make out your plant from such a dried fragment. Send a fresh specimen in damp moss.

GARDEN BONNET.—Linda writes to us as follows:—"Seeing sun bonnets recommended at page 247, made of cardboard, covered with calico, allow me to hint that these, as generally made, are almost too hot and close for such warm work as gardening on a hot day. My own is just like a large saucer, two feet in diameter, made of rough straw, and is what the Nice peasants wear, lined with pink calico, and bound with narrow black velvet. Strings are sewn inside the crown, and tie under the chin. It shades the sun fully, gives plenty of air, and is very picturesque." As editors are always old, we may venture to express our conviction that it shades a pretty face.

SILVER PHEASANTS.—G. A. M. wishes to know the market price of young ones.

BEES.—We have forwarded Mr. Taylor's letter to "A Country Curate," and as both are searchers after truth, and both have advocated their own views, the subject may now be left to the decision of public opinion.

BUDS AND CUTTINGS.—Mr. R. Tomlinson, Post-office, Banbury, says:—"I am a rose amateur fancier, and quite approve of your notion of buying buds or cuttings. I have a collection of nearly 200 roses, and shall be happy to forward buds in exchange for cuttings of geraniums or buds of roses; or shall be willing to buy buds of roses, or cuttings of geraniums at a moderate price. Where can I procure *Browston Hybrid Cucumber* seed?"

STRAWBERRY PLANTS FOR FORCING (W. X. I.).—Those used for forcing this year will not do for forcing next year; you must have fresh plants.

TWELVE SHOW GOOSEBERRIES (Ibid).—Red.—Conquering Hero, Banks's London, Saunders' Wonderful. Yellow.—Bell's Goldfinder, Pigott's Leader, Hardcastle's Gunner. Green.—Swift's Queen Victoria, Riley's Thumper, Fairclough's Thunder. White.—Cook's Eagle, Leigh's Queen of Trumps, and Riley's Tally-ho.

HOT-WATER HEATING (A Constant Reader, Staffordshire).—The hot-water tank in the centre will easily supply one on each side of it. All the precaution necessary, is to have the flow pipes to each on the same level, and the return pipes similarly corresponding.

ANTS (W. B. A.).—These are most obstinate tenants, we can offer you no fuller advice than the following from *The Cottage Gardeners' Dictionary*:—"To drive this insect away, dig up its nests and haunts, and mix the earth with gas-lime. To kill it, pour over the nest at night a strong decoction of elder leaves. To trap it, smear the inside of a garden pot with honey, invert it over the nest, and when crowded with them hold it over the steam of boiling water, or turn a flower-pot, with its hole stopped, over the nest: the ants build up into it, and the whole colony may be taken away in a shovel. They may be kept from ascending standard and espalier trees, by tying a piece of wool round the stems and the supporters."

DUCKS (Amicus).—You might render your pond ornamental, and keep the ducks upon it, by running a low trellis of wire round it; and upon this trellis you might train the Larger Periwinkle (*Vinca major*), which is always green and bright looking.

CALCEOLARIA (F. L. S.).—Your seedling, of course, is new, as all Calceolaria seedlings are, but it has no properties to raise it above a border plant.

CALENDAR FOR AUGUST.

FLOWER GARDEN.

ANEMONES (common) sow. ANNUALS, stick; water; clear from decayed leaves, &c. AURICULAS, shift into fresh earth; water; seedlings prick out; sow. BEDS, in which bulbous flowers have grown, fill with annuals from pots, to flower through autumn. BIENNIAL seedlings, transplant. BULBOUS-rooted flower-seeds, as *bulbous Iris*, &c., to obtain varieties, sow. BULBOUS roots remove or transplant; remove and plant offsets; plant. CARNATION layers cut from old root and plant; water frequently; layering may still be done, b.; card the flowers, and shade from sun, e. DAHLIAS, stake; thin the flowers. DAISIES propagate. Put in CUTTINGS of all flower-garden *Geraniums* early. DOUBLE-blossomed perennials with fibrous roots, as fine double *Larkspurs*, &c., propagate by division, e. DRESS borders as required. EDGINGS of box, &c., clip in wet weather. EVERGREENS may be moved, e., if wet weather; plant cuttings. GRASS, mow and roll weekly. GRASS SEEDS may be sown, e. GRAVEL, weed and roll weekly. HEDGES, clip in moist weather, except laurel and holly hedges. HELIOTROPES, put in cuttings under glass in a gentle heat, b. MIGNONETTE sow in frame, b. PELARGONIUMS propagate by cuttings, b. PERENNIALS, in pots and elsewhere, will require water almost daily; cut down flower-stalks as they finish blooming; seedlings transplant. PINKS may be planted out. POLYANTHUSES, sow. PONDS keep clear of green scum. POTTED ANNUALS will require water daily in dry weather. RANUNCULUSES, sow; plant in pots to bloom in November. ROSES, bud; prune in strong straggling shoots; cuttings of China and Tea-scented varieties plant under hand-glasses. ROSES may be budded to the end of September on the Manetti and some Bourbon stocks. September is the best time to bud, unless done at the end of May. SEEDS, gather as they ripen. Even those of *Heliotropes* and *Verbenas* will frequently be found to be fertile.

SHRUBBERY, cut off the bunches of seeds of *Laburnums* and *Lilacs*, &c., to strengthen in the bloom next year; also cut off the seeds of *Rhododendrons*. SOWINGS, to obtain varieties, had better be done in boxes. TEN-WEEK stock, sow, b. TULIPS, and other bulbous-rooted flower-seeds, sow. TURF may be laid, e. VERBENAS, put in cuttings of new kinds, e. WATERING will be required generally in dry weather. WEEDING, generally attend to. CUTTINGS of *Penstemons*, *Snapdragons*, double *Lychnis*, and other herbaceous plants, will yet succeed, if planted and shaded under hand-glasses. Of the *China Asters*, mark the finest, and save for seed. D. BEATON.

ORCHID HOUSE.

AIR, give in moderate quantities to the Indian-house, and more freely to the cooler. BASKETS, plants in, that are growing, take down once a week, and dip in tepid water. CREEPERS, prune in and tie, to keep within moderate bounds. DYING LEAVES and FLOWERS remove daily, as in this department they quickly rot and give out a bad effluvia, offensive to the visitor and injurious to the plants. HEAT, if the weather continues warm no fire will be needed; but should cold nights and gloomy days visit us, towards the end of the month a little artificial heat will be necessary. INSECTS, look after and destroy diligently; they breed fast at this season. MOIST ATMOSPHERE must still prevail internally, as most of the plants will now be rapidly forming their new pseudo-bulbs. REST: several species will by this time have fully made their annual growth, refrain then from watering, and, if possible, remove them into a cooler house. SHADE, still use, from ten to three o'clock. SYRINGE the growing plants the same as last month. T. APPLEYBY.

PLANT STOVE.

ACHIMENES going out of flower place in a cold pit and give no water to. *Achimene picta* should now be coming on to bloom; in winter, water freely, and tie out. CUTTINGS of various stove-plants may yet be made, and placed under bell-glasses in heat; cuttings rooted should be directly potted off, and placed in a close heat till they begin to grow again. GLOXINIAS going out of bloom set out of doors, give no water, and as soon as the leaves are quite dead remove them in their pots into the place where they are to remain till spring; do this before there is any danger of frost. GESNERAS, treat similarly. *Gesnera Febrina*, repot and grow on to bloom at Christmas. IXORAS, finish potting for the last time. PASSIFLORAS, and all other creepers, reduce within bounds by pruning and tying in. RED SPIDER, a most tiny yet destructive insect, wage continual war with; wherever a leaf is seen spotted the enemy will be there; frequent sponging is the best remedy. STOVE PLANTS in pits and frames expose to gentle showers. OLD STOVE PLANTS grown straggling, cut down, and give no water till they begin to grow again. THRIPS, another very destructive enemy, may be killed by washing the flues or pipes with sulphur, and smoking the house severely with tobacco two or three nights in succession; wash the house all over with soap and brush towards the end of the month. WINTER-BLOOMING PLANTS, such as *Eryanthemums*, *Justicias*, *Aphelandras*, *Seriocographis*, &c., pot for the last time this year. T. APPLEYBY.

FLORISTS' FLOWERS.

AURICULAS and POLYANTHUSES, continue in their summer quarters, but keep clear of weeds and slugs. CARNATIONS and PICOTÉES, finish layering the beginning of the month. DAHLIAS, shade, tie effectually, and water freely. See to all FLORISTS' FLOWERS in POTS that the drainage is not stopped up, that all worms in the pots are destroyed; lime-water is death to them. Water no plants that appear mossy on the surface till the moss is removed, and the earth fresh stirred. GUERNSEY LILIES pot for flowering in September. HOLLYHOCKS, mulch and water freely; tie to tall, strong stakes; put in cuttings of; transplant seedlings. LAYERING is a good way to propagate: layer *Pansies* and *Pinks*, and various other plants. Every attention must be paid to keep everything going at the right time. RANUNCULUSES must all be taken up immediately, and put away till spring. TULIPS must also be taken up, if not done already. SEEDS of various kinds must be carefully saved before they drop out of the seed-vessel. Let neither WEEDS nor VERMIN of any kind be allowed at any time, or in any place. T. APPLEYBY.

GREENHOUSE.

AIR, give plenty night and day, especially during the former. In very hot weather, it is often advisable to keep rather close with a moist atmosphere during the day, even though the sashes should be entirely removed in the evening, to be replaced in the morning. This treatment will apply to *Heaths*, *Azaleas*, *Camellias*, &c., that are now making their growth. Those which have set their buds may be removed to a sheltered place, and have no glass protection for a time. BUDDING, of all things, finish before the wood gets hard. It may yet be done with *Oranges*, *Camellias*, &c. CINEARARIAS, propagate by rooted slips, and transfer the earliest to blooming pots. PELARGONIUMS: those done flowering cut down, and now pushing again may have the soil shaken from them, be placed in light soil, and in a close moist pit, to encourage free growth. Until that growth has taken place, however, give little water at the roots. In growing from cuttings, success will greatly depend on never allowing them to stand still, but keeping them constantly, but slowly, growing. Cut down successional plants as they get out of bloom. The fancy kinds, of the points, and old flowers, are merely removed, will flower again before winter. GREENHOUSE PLANTS in GENERAL, if healthy and their wood made, will be better out-of-doors in a sheltered place than within; defending the pots from being too much heated in sunshine is even of more importance than shading the tops. ALL YOUNG STOCK growing freely begin to harden by exposure by the end of the month. POTTING: finish shifting as soon as possible, that the plants may be feeling the outside of the pots before winter. CHRYSANTHEMUMS,

SALVIAS, &c., for winter blooming, set in an open place fully exposed to sun and air. The former must not be stopped any more. The latter should alone receive final stopping and shifting. **PROPAGATION**: almost everything may now be successfully propagated. The whole of the **SUCCULENT GERANIUM FAMILY** will do best on a south border. **CLIMBERS**, on the rafters, train when over rampant, but the more natural looking the better. By and by they must be cut in to allow more light to the plants. **GATHER SEEDS** of all desirable things as they ripen. The propagating of half-hardy things, such as **CALCEOLARIAS**, may commence about the end of the month. About the middle of the month, **SOW SEED OF HERBACEOUS KINDS** in a cool pit. **WATERING** will not be wanted quite so much, unless the days are very bright. In such days use the syringe among growing plants freely in the afternoon. **DRESS**, tie, surface earth, and keep all neat and clean. R. FISH.

FRUIT-FORCING DEPARTMENT.

As long as the temperature will permit, admit **AIR** day and night. Allow the **TEMPERATURE** to range, with sun-heat, from 65° to 85°, and during night from 55° to 65°. **FIGS**, water liberally. Give the last shifting, early in the month, to those **PINES** intended for early fruiting next season; let others follow in succession; keep down superfluous suckers; use abundance of atmospheric moisture. Clear ripe **GRAPES** from all diseased and mouldy berries; admit abundance of air. Keep down, or, rather, keep away, the **RED SPIDER**, by lighting a fire on dull days, and brushing the pipes or flues with a thin mixture of sulphur and water. Thin freely the late crops, and water the **VINES** in dry weather with liquid manure, also use mulchings. Give **PEACH-HOUSES** from which the fruit has been gathered copious syringings; and get the wood hardened and ripened before removing the sashes. Regulate and stop the shoots, and set the fruit on **MELON** plants; use manure-water liberally. Strike cuttings, or sow seeds, of **CUCUMBERS** intended for a late supply. Encourage the completion of growth of all **PLANTS IN POTS** intended for forcing, and place those fully matured at the back of a north wall. Lay **STRAWBERRIES** in small pots, to be shifted into larger. Turn **BARK BEDS**. **PAINT**, wash. Clear out furnaces, empty and rinse out boilers, and have everything in readiness for a cold weather campaign. R. ERRINGTON.

ORCHARD.

BUDDING, finish, and remove bandages from that done three weeks since. Remove waste shoots from stocks, especially below the bud. **BLIGHT** (American), apply the brush once more, using spirits of turpentine. **APHIDES**, still try to extirpate them in peaches, plums, &c. **RED SPIDER**, if this appears, dust flowers of sulphur on the back of the leaves. **CHEERRIES**, net carefully. **COCCUS**, or scaly insect, if this appears use soap-suds. **FIGS**, continue to disbud, and commence stopping rambling shoots. **VINES**, follow up stopping of laterals, and keep them thin; also thin the berries. **APRICOTS**, stop gross leaders, and keep down breast shoots by pinching. **PEACHES** and **NECTARINES**, stop all gross shoots, and keep under breast wood by the same process; where too thick, remove shoots altogether. **PEARS**, remove foreright spray, thinning or stopping the wood freely, first selecting and tying down all short-jointed and brown-looking wood. **PROTECT** fruit with nets, &c. **WASPS**, destroy nests. Late **STRAWBERRIES**, water well. **ALPINES**, reduce runners from, and place slates or tiles beneath. **STRAWBERRIES**, make plantations of early and strong runners. **RASPBERRIES** (double-bearing), remove all barren shoots from, and carefully train those in blossom. **TOMATOES**, thin, stop, and train. Commence and complete, as soon as possible, all **NAILING** and **TRAINING**, whether on walls, pales, or espalier trellises. **GOOSEBERRIES**, still continue the extirpation of

caterpillars. **BUSH FRUIT**, retard by shading with mats. **GRAFTS**, remove stock shoots from, and protect from wind waving. R. ERRINGTON.

KITCHEN-GARDEN.

Particular attention should be paid to **SOWING** from the 1st up to the 12th of this month, as so many of our best vegetables and flowers are produced for the next season from the sowing made at the above-mentioned time; the **Cauliflower** only should be deferred until about the 21st of the month. **ALEXANDERS** and **ANGELICA**, sow, and attend to earthing-up that in growth. **ARTICHOKES**, cut away the heads whether required for use or not, for if allowed to run to flower they will very much exhaust the roots. **ASPARAGUS**, attend to; keep clear from weeds; should any branches be falling about over pathways let them be tied up to sticks rather than cut away. **BASIL**, attend to; cut and dry off steadily when in bloom. **BORAGE**, sow, and thin out growing crops, or earth-stir and look after seeds. **BORECOLES**, **BROCOLIS**, and **BRUSSELS SPROUTS**, plant out as early as possible; do not spare manure among any of the cabbage tribe. **CABBAGES**, sow of any favourite kinds; also a little *Red Dutch* for pickling; and prick out for planting out next month. **CARROTS** (Early Horn), sow on dry warm borders for early spring use; keep the growing crops clear from weeds. **CAPSICUMS** encourage the growth of by earth-stirring. **CAULIFLOWERS**, sow out in open quarters, so as to have a stock of healthy sturdy plants, about the 21st to the 24th, to stand the winter; also plant, and water well. **CELERY**, plant out in earnest, and attend to earthing-up advancing crops in dry weather. **CRESS** (American), sow. **CUCUMBERS**, attend to thinning, topping, and clearing away all decayed leaves, either in pits, frames, or out-door crops; cuttings may be struck of any favourite kinds for autumn and winter growth. **ENDIVE**, sow, plant, or prick out in succession, and tie up, or cover up, full grown for blanching. **HERBS** of all kinds, cut and dry when in flower. **HOEING**, attend to at all favourable opportunities. **LEeks**, plant out. **LETTUCES**, sow *Brown Cos* and *Hardy Hammer-smith*, the two best kinds for general culture. **MELONS**, give plenty of air to; be sparing of the water among those ripening off their fruit; encourage the growth of the younger crops just swelling off their fruit with about three liberal waterings of liquid manure-water; let it be given steadily from the spout of the water-pot, and principally at the back part of the beds, and not over the crowns of the plants; and sprinkle almost daily in hot, dry weather, at shutting-up time. **ONIONS**, sow of the silver-skinned kind, being most hardy, to stand the winter; keep the advancing crops clear from weeds, and press down stiff-necked towards the end of the month, as cases may require. **PARSLEY**, cut down or transplant, or sow, and collect seed. **POTATOES**, if early and ripe, may be taken up and stored away in a cool situation, for present use, in particular where the ground is wanted for some other immediate crop. **RADISHES**, sow, if required. **SAVOYS**, plant out as early as possible. **SEEDS** of all kinds, collect as fast as they ripen, or the birds will make sad havoc among them. **SORRELS**, keep flower stems cut away. **SPINACH**, sow, of the prickly seeded kind, in well prepared borders; and sow in drills ten inches apart. **SWEET MARJORAM**, see *Basil*. **TURNS**, sow, of the little early kinds, any time during the month, and attend to thinning and hoeing advancing crops. Should the weather be very hot and dry, *Water* thoroughly previously to sowing the various seeds, and if a little shading could be given from ten to three in the afternoon, until the plants are up, all the better. T. WEAVER.

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WEEKLY CALENDAR.

M D	W D	AUGUST 7-13, 1851.	WEATHER NEAR LONDON IN 1850.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bef. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in In.						
7	Th	Carline Thistle flowers.	29.871—29.863	77—58	S.W.	08	34 a. 4	37 a. 7	0 21	10	5 33	219
8	F	Burdock flowers.	29.733—29.659	75—51	S.W.	02	35	36	1 2	11	5 26	220
9	S	Purple Melic Grass flowers.	29.740—29.700	71—51	S.W.	—	37	34	1 51	12	5 18	221
10	SUN	8 SUNDAY AFTER TRINITY.	29.875—29.838	75—58	S.W.	02	38	32	2 46	13	5 10	222
11	M	Dog Days end.	29.823—29.722	74—50	S.W.	04	40	30	rises.	14	5 1	223
12	TU	Michaelmas Daisy flowers.	29.821—29.693	71—46	S.E.	10	42	28	8 a. 6	14	4 51	224
13	W	Zabrus Gibbus seen.	29.901—29.855	75—47	N.W.	—	43	26	8 29	15	4 41	225

ABOUT five miles from Lewes stands what once ranked among "the stately Halls of England"—Plumpton Place—and, above all, interesting "to the admirer of patriotic valour and undaunted opposition to tyranny, as the spot near which the brave De Montford marshalled his ranks, when anticipating an engagement with the fickle Henry III., an engagement which commenced within a mile from the spot, nor ceased until the town of Lewes was in flames." It is not, however, for its association with feats of arms and slaughter that it claims our notice and our interest here, but as having been the residence of LEONARD MASCALL. He was the proprietor of Plumpton Place in the reign of Henry VIII., and it was then surrounded by a deep moat, of which three parts only now remain. Into the waters of this moat, tradition informs us, Mascall turned the first carp introduced into England, and that he brought them from the Danube, their descendants probably forming a portion of the abundant supply the moat still affords to the table of the present owner, the Earl of Chichester. The authority for this statement is a rare volume, of which the authorship is attributed to Mascall, entitled *A Book of fishing with hook and line, and of all other instruments thereunto belonging*. On the title-page, dated 1590, it is said to be "made by L. M.," and if this be Mascall, he writes thus of the two achievements by which he is best known to his countrymen:—"The carp is a strange and dainty fish to take, his baits are not well known, for he hath not long been in this realm. The first bringer of them into England (as I have been credibly informed), was Master Mascall, of Plumsted, in Sussex, who also brought first the planting of the Pippin into England, but now many places are replenished with Carps, both in pounds and rivers."

It is scarcely possible now to determine what the "Pippins" were which Mascall introduced, but we can readily understand that the successful cultivation of a good desert apple would be considered worthy of especial remembrance, when we find that in the preceding reign, that of Henry VII., such apples cost from one to two shillings each, a red one fetching the highest price. This appears from a MS. signed by the monarch himself, and preserved in the Remembrance Office. The Pippin introduced by Mascall seems to have been entrusted for cultivation to the king's fruiterer, Richard Harris, for Lambard tells us that this fruiterer first planted Cherries, *Pippins*, and the Golden Renate, at Tenham, in Kent. These, however, were only improved varieties, for the apple is traceable as cultivated in Britain to the earliest period of which we have any written record. We are even fully warranted in believing that this fruit was known and cultivated by the Britons before the arrival of the Romans upon our shores, for in the Welch, Cornish, Armorican, and Irish languages and dialects, it is denominated the *Avall* or *Aball*. The fruit, therefore, had a native name, from which our present name apple is evidently corrupted, and the *Hœdui*, inhabitants of the modern Somersetshire, appear especially to have cultivated this fruit. Their chief town even derived its name from the circumstance of its being surrounded by plantations of the apple, for it was known as *Avallonia* (Apple Orchard) when first visited by the Romans. Glastonbury stands upon its ancient site. (*Richard's Chron.* 19.) The cultivation of the apple was not confined to our south-western districts, for another town named after it, *Avallana*, was in the north of England, and in the course of the third century we have decisive testimony that the Roman settlers had introduced fresh varieties of this fruit, and that its cultivation had become so extended that large apple orchards had been made as far north as the Shetland Islands. (*Solinus*, cap. xxiii.) Traces of ancient orchards are still existing in those high northern localities, and one in the Hebrides, belonging to the Monastery of St. Columb, is described by Dr. Walker as having existed there, probably, from the 6th century. (*Essays*, ii. 5.) Others are mentioned by Camden and Leland. It is quite certain that in the middle ages the apple had become one of our staple vegetable products, for whenever the chroniclers speak of times of dearth, apples are almost always mentioned as articles causing distress by their scarcity, and Mascall says:—"Often it hath been seen, one acre of orchard ground worth four acres of wheat ground."

The varieties of the apple gradually increased, for Gerard, writing of this fruit in his "Herball," during 1597, speaks of the infinite varieties of the apple, but seems to attribute the variation much "to the soil and climate." "Kent," he goes on to say, "doth abound in apples of most sorts. But I have seen in the pastures and hedge-rows about the grounds of a worshipful gentleman dwelling two miles from Hereford, called Mr. Roger Bodnome, so many trees of all sorts, that the servants for the most part drink no other drink but that which is made of the apples. The quantity is such that the parson hath for tithe many hogsheads of syder. The hogs are fed with the fallings, which are so many that they will not taste of any but the best." Though the varieties were so numerous, Gerard gives drawings of but six, which we may presume were the most in favour, and were the Pome-water, Baker's-ditch, King Apple, Queen-ing or Queen Apple, Summer Pearmain, and Winter Pearmain. Heresbach, who wrote a little earlier (1570), says the "cheefe in price" were the Pippin, the Romet, the Pome-royal, and the Marligold.

Mascall did not confine his attention to the mere sports of the country, for in 1581, he published *The Husbandry ordering and governing of Poultry, practiced by the learnedest, and such as have been known skilfullest in that art and in our time*. We regret that we cannot speak of the contents of this work, for although it is in the Catalogue of the British Museum, yet it is not to be found now among its riches. In

searching for it we discovered there another work, published in 1580, entitled "A Discourse of Husbandry no less profitable than delectable, declaring how by the husbandry, or rather housewifery of Hens, for £55 11s. 1d. (500 francs), once employed, one may gain in the year 4,500 francs, which in English money maketh £500 of honest profit, all costs and charges deducted. Written in French by Master Prudens Choiselat, and lately translated into English by R. E." The stock from which the author proposed to reap such a golden harvest comprised 1,200 hens, and 120 cocks.

It is not improbable that Mascall's was a translation of the same work, and for the rest of his publications he was also indebted to our French neighbours, who then far excelled us in all the practices of gardening. The volume to which we allude issued from the press in 1592, and is entitled:—*A Book of the Art and Manner how to plant and graff all sorts of trees, how to set stones and sow pepins, to make wild trees to graff on, as also remedies and medicines. With divers other new practises, by one of the Abbey of S. Vincent in France, practiced with his own hands; divided into seven chapters, with an addition in the end of this book, of certain Dutch practices set forth and Englished by LEONARD MASCALL.*

He begins with this poetical address, entitled "The Booke to the Reader."

Each wight that willing is to know
The way to graff and plant,
May here find plenty of that skill,
That erst hath been but scant.
To plant or graff in other times
As well as in the spring
I teach, by good experience,
To do an easy thing.
The pleasure of this thing is great,
The profit is not small,
To such men as will practice it
In things meere natural.
The poor man may with pleasure find
Some thing to help his need,
So may the rich man reap some fruit
Where erst he had but weed.
The nobleman that needeth naught,
May thereby have at will
Such pleasant fruit to serve his use,
And give each man his fill.
The commonwealth cannot but win
Where each man doth intend
By skill to make the good fruits more
And ill fruits to amend.
Weigh well my words and thou shalt find
All true that I do tell,
Mine author doth not write by guess,
Practice made him excel.
If thou wilt practice as he did,
Thou mayest find out much more,
He hath not found out all the truth
That nature hath in store.

The author was evidently a practical man, giving correct directions as to the modes and time for grafting, and the stocks to appropriate stocks, and treating as "but jests" the assertions that apples and other fruits may be grafted on the elm, yet he says—"Ye may graff the Fig-tree upon the Peach-tree or Apricot," and many others equally at variance with modern opinion and experience. On the title-page, also, is a woodcut, not giving a very elevated idea of their grafting practice, for there are three trees larger and taller than the gardener, the heads of which he has sawn off and has inserted in each three scions by cleft-grafting.

The French author of the work was a Priest, and it was no ill-timed conclusion for the work to insert this "Note for all Graffers and Planters." "Whensoever ye shall plant or graff, it shall be meet and good for you to say as followeth:—Lord God, hear my prayer and let this my desire of Thee be heard. In Thy name O Lord we set, plant, and graff, desiring that by Thy mighty power they may increase and multiply upon the earth, in bearing plenty of fruit, to the profit and comfort of all Thy faithful people through Christ our Lord. Amen."

The last work published by Mascall appeared in 1596, and is entitled *On the Government of Cattle*, and a few years afterwards he was appointed to the office of royal farrier, an appointment in those days not at all evidencing that he had any skill in the craft of shoeing or leeching horses. It is quite as likely to have been bestowed upon him, because, like his royal master, he was a scholar and believed in witches, giving rules "to know the difference between a horse bewitched, and other soreness!" Of the birth, parentage, and death of Mascall we have been able to discover no traces, though the family ranked at an early date among the Sussex gentry, as appears from the Herald's visitations.

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-four years, the average highest and lowest temperatures of these days are 74.4° and 52° respectively. The greatest heat, 93°, occurred on the 10th in 1842, and the lowest cold, 36°, on the 6th in 1833. During the period 88 days were fine, and on 80 rain fell.

SEVENTEEN years ago, when Mr. Loudon visited Tidworth House, the seat of T. A. Smith, Esq., in Hampshire, a visit paid for the purpose of inspecting that keen sportsman's hunting establishment, he tells us, that he was "agreeably surprised to find an excellent kitchen-garden, and a very intelligent young gardener, Mr. Sanders," who was renovating that neglected garden, and "who," adds Mr. Loudon, "judging from his acquirements and ideas, we have no doubt will make it what it ought to be." Mr. Loudon was a true prophet, and there are examples of horticulture now to be seen at Tidworth which will bear comparison with any to be found in other parts of the kingdom. We shall notice no other than the vine culture, and this only in reference to a recently published small volume, now before us, of which Mr. Sanders is the author, entitled, *A Practical Treatise on the Culture of the Vine, as well under glass as in the open air*. He has characterized this work in one sentence—"My desire is only to lay down general, comprehensive, and practical rules, which I have worked out and tested, and to which I would fain draw the attention of others."

Mr. Sanders, we can assure our readers, has succeeded in his desire, for he has composed an excellent and well-illustrated practical work; and though we think he recommends too rich a soil for his vines generally, whether in the border of the stove, in pots, or in the open air, yet in almost all other points we admire his practice; and that our readers may judge for themselves whether the book is not just that which they will find valuable for reference, we will extract what Mr. Sanders says about the open wall culture of the vine:

"There appears to me to be a great want of good management in the cultivation of the vine in the open air. This, I think, is much to be regretted, when we take into consideration the numerous eligible places where it might be grown to great advantage, and profit to the cultivator; for instance, against farm-buildings, and other such erections, which are for the most part quite bare. In some instances the soil will be found suitable to the growth of this fruit; but where such is not the case, a border of ten or twelve feet wide must be formed, adhering to the directions previously given in making the borders for the vineries. In order to prevent cattle getting to them, a paling could easily be put up at a trifling expense. When the border is made, proceed with the planting, selecting the following sorts—Sweet Walter, Muscadine, Esperion, and Black Cluster, all of which are well suited for the open air. In order to preserve a neat appearance, and also to prevent the necessity of disturbing by constant nailing the walls or boarding to which the vines are to be trained, I would recommend the use of galvanized nails, which can be purchased at a very reasonable price. Let the vines be arranged two feet apart, and at every other row of nails plant a vine, which ought to be done in the autumn, should the border be ready then, but not later than the month of March, so as to enable them to strike out young fibres before the buds begin to swell. In pruning, leave only two buds at a foot-and-a-half from the ground: those under them should be cut off with a sharp knife, after they are grown to the length of a foot or so. Select the strongest, and remove the other. Train the young shoot to the nails, but be careful not to tie them too tight, which would impede the free circulation of the sap. When the shoot has reached to the top of the wall or building—which it will very soon do provided proper care and attention is taken to give water when the weather is dry, and occasionally to loosen the surface by lightly forking the portion of the border nearest to the stems—you must cover the whole surface with a thin dressing of well-rotted manure, to pre-

vent too rapid evaporation, and also to screen the roots from the too powerful rays of the sun. Pinch the shoot off when it has attained the required height. It will, however, require some degree of care and attention in keeping the lateral shoots removed so as to admit the sun and air to the wood, in order to get it well ripened before the cold weather sets in, as much of the success depends on the wood and eyes being well matured. When this end is fully accomplished, prune off the stems of the lateral shoots nearly close to the eye from which they proceed. The vines will now be in a state of repose, and will therefore require nothing further beyond a good dressing of rotted manure being forked into the border. As the spring advances they will begin to bud forth, when care must be taken to select the strongest shoots, leaving them at regular distances, as shown in the sketch.

"It would well repay the grower to take pains in thinning each bunch properly, only one of which must be left on each shoot; for, by pursuing this plan, a greater weight of fruit will be obtained, as well as a better quality, than if they were left in a crowded state.

"The operation of pruning may be performed at any time after the fruit is cleared off, and the wood well ripened and leafless; but it is not so well to defer it beyond the latter end of January, for this reason, that the wound made with the knife becomes well healed, and prevents bleeding in the spring: whereas, if left beyond that time, the vine is very often much weakened from the loss of sap, hence puny wood, yellow foliage, and an indifferent crop. In pruning, cut each shoot back to two eyes from the main stem, one of which only is to be left to produce fruit. The object in leaving two is to guard against accident, in case of one being injured previously to their budding forth."

GARDENING GOSSIP.

THE progress of *Horticulture in Hereford* is exceedingly gratifying. In June, the revival of a show, which had been neglected some years, indicated a movement the right way; but in July the show would have done honour to any provincial city. The green was hurdled in, a splendid tent was completely filled, while those which were sufficient for the whole show last month were entirely occupied with fruit and vegetables, and cottagers' production.

The *Fuchsias* were far better than those at Chiswick; and two specimen plants, *Fulgens* and *Formosa elegans*, could scarcely have been beaten. *Geraniums* good for the time; *Verbenas*, *Dahlias*, *Carnations*, and *Picotees*, helped to fill the tables. Some smartish competition amongst the stove and greenhouse plants showed that the gardeners in the neighbourhood are roused a little, and there was a fair advance in *Balsams*. The fruit was good for the period; but whoever showed the best was too greedy. By showing a collection of fruit, but taking the *Grapes* away as separate competition for grape prizes, and *Melons* as separate competitors for Melon prizes, he left the collection bare, and was easily beaten; for there was nothing but a fine *Ripley Queen pine* worth mentioning to sustain it. Country exhibitors, generally, are the worst possible arrangers of their productions. Here, for instance, was a man pretending to show a collection of fruit which looked exceedingly well, but when the judge went round he found separate tickets on grapes, melons, &c., showing that they belonged to other classes, and that the collection, which looked so rich, was, in fact, deriving its chief effect from fruit entered separately, but standing with the collection. The band of the 82nd Regiment, now quartered at Brecon, played all the afternoon in a manner which entitles them to take the highest ground, and with a fine day to help them, drew all the population to the Castle Green.

Captain Cotten's gardener, in Kent, has grown some *Cockscombs* of great size this season, one measuring twenty-three inches from tip to tip, and handsome in

proportion. We wish gardeners in general would pay more attention to Balsams and Cockscombs; they show skill as much as any thing.

Balsams will come single at first very frequently; and all those who wish to grow them in perfection will pick off all the early buds and flowers, for later ones come double.

We have seen a bed this year composed of plants turned out from a large number because they were single, and now there is not a single one among them; six weeks out-of-doors, in rich beds, has changed their condition entirely. We feel convinced that when they are from a good stock they only want strength of growth to bring them very double.

The last *South London Floricultural Show* at the Surrey Gardens was the best ever held in that place of entertainment. The plants of Mrs. Lawrence and Mr. Collyer were as beautiful and as well grown as any they have shown, and formed a complete exhibition of themselves.

Carnations and *Picotees* were in great abundance. They were properly judged off cards, and then all who were not too idle carded them; for it is a great protection in a hot tent. *Cut flowers* were exhibited in perfection; Messrs. Rollisson, in particular, had a stand of rare *orchidaceous flowers*, such as we have never before seen cut. Mr. Turner showed some *seedling Picotees* and *Carnations*, more particularly mentioned elsewhere. *Honey* formed no inconsiderable feature for those who take an interest in bees. Messrs. Paul and Son and Mr. Francis vied with each other in a display of *Roses*, which were splendid, particularly those of Mr. Francis. A better show of *fruit* than has ever been previously shown occupied one side of a tent, in which there were, also, *seedling Antirrhinums*, good for nothing, and *Fuchsias*, of which one (*Banks's Leader*) is a pretty variety, previously mentioned by us under a number, and others already noticed. Some good *Balsams*, and others very bad, formed a row down one side of a tent. A collection of *British flowers* and one of *Grasses* possessed great interest. Among the *Petunias* we noticed one as good as any, and called *The Crimson King*; but as we have a good deal to do with *Petunias* before they will please us, they must be got out of their flimsy habit, and be produced with thick petals. The proprietors of the Garden, notwithstanding the weather was enough to sicken them of flower shows, intend to celebrate the anniversary of opening the Garden with a show on the thirteenth of August, open to all England, and no entrance fees. It will beat all that has ever taken place where none but members compete without paying. Notwithstanding the extreme wet day, and the few persons present, Southby took advantage of a fine interval, and sent off as good a display of appropriate fireworks as we ever saw. The last, a magnificent tree, in which you saw flowers of all colours, half filled the air.

The prospectuses of some *Dahlia Shows* invite the showing of new flowers let out the present year, and some of them have omitted to say whether fancy flowers are to be included.

Those which have purposely excluded fancy flowers may have done so to prevent the difficulty of judging mixed claims, and very properly. Who is to determine fairly between the merits of one stand with four show and two fancy, and another with two show and four fancy, another all selfs, and another all fancy? It is pretty nearly like judging dogs and sheep together, where half-a-dozen is to be made up without any distinct condition as to the number of each. The schedules ought to be superseded, and others sent out. If fancy and other flowers are to be permitted together, the number of each should be defined, else there will be confusion and dissatisfaction.

E. Y.

NEW PLANTS.

THEIR PORTRAITS AND BIOGRAPHIES.



MORELL'S SHOWY MILTONIA (*Miltonia spectabilis*, var. *Morelliana*.—*Gardeners' Magazine of Botany*, ii. 41.—This is the third form which the researches of botanical collectors have furnished us with of this lovely *Miltonia*, a genus named by Dr. Lindley in compliment to the Earl Fitzwilliam, who shines forth among the foremost patrons of natural science in this country, and also among the oldest of our collectors of tropical orchids. This beautiful variety was procured from the Brazils by *M. Morell*, of Paris, after whom it was named on the continent, whence it was introduced to this country by the celebrated nurserymen, Messrs. Knight and Perry, of the Exotic Nursery, King's Road, London, and where it flowered for the first time last November, when a beautifully-executed coloured drawing of it was made and published, with a full description, in the last March number of the *Gardeners' Magazine of Botany*, a work which we have more than once had occasion to recommend to general notice.

Mr. Henfrey (to whose name Dr. Lindley dedicated the genus *Henfreyia*), the gentleman who conducts the botanical department of this magazine with so much spirit and accuracy, cannot determine any specific distinctions between *Morell's Miltonia* and *Miltonia spectabilis*; but let us hear his own just observations. "There does not seem to be sufficient ground for separating it specifically from *M. spectabilis*, of which we already know two such differently-coloured forms. In the original type of *M. spectabilis* the petals are almost white, and the lip much more deeply coloured. In the variety, *purpureo-cerulea*, figured by Sir W. J. Hooker, in the "*Botanical Magazine*," the sepals and petals are deep purple, while the lip is pale. In the present form the sepals and petals are also all uniformly dark, but the lip is of a different colour; and the veinings, so distinct in the type, are only well marked in the lower part; it is also without the yellow colour of the column, and of the lamellæ of the lip. The bracts appear to be more green than in the other

forms, in which they are represented as fuscous or yellowish."



JAVANESE MEDINILLA (*Medinilla Javanensis*).—*Botanical Magazine*, t. 4569.—At page 215 of the fifth volume of *THE COTTAGE GARDENER*, Mr. Appleby has given the history, cultivation, &c., of three Brazilian and one Java species of this delightful genus of *Mouth-stamens* (*Melastomads*). This, which we are now to chronicle, is also from Java, as the specific name implies, and if less noble than *Medinilla magnifica*, from the same island, still it supports the very favourable opinion of gardeners respecting the beauty and free habit of the family; besides which, if it should turn out that this fine evergreen stove plant retains the habit of flowering in the winter, as it first did in the stoves of the Messrs. Rollinson, at Tooting, this quality, of itself, will soon gain it an admittance into the more select collections in this country. Messrs. Rollinson have also imported another species, named *M. crassifolia*.

The genus was named by a French botanical traveller, named Gaudichaud, who did not explain the meaning of it, but it is supposed to be a commemorating genus, that is to say, to record a person's name. It is referred to a section of *Melastomads* (*Melastomaceæ*), which is named *Miconiads*, after *Miconia*, an allied genus, by Ruiz and Pavon. In the Linnean system it stands in the first order of the tenth class, *Decandria Monogynia*. According to Dr. Blume, a Dutch botanist, who studied and wrote much on the plants of Java, the bark of *Medinilla* is employed as an emollient, and also for poultices; the berries are wholesome, but not very palatable, like some others of plants included in this large Natural Order. Blume, who named thirteen genera of eastern *Melastomads*, named the *Medinillas* *Hypenanthæ*, now one of three synonyms of the genus.

Stem, four-angled; *leaves*, stalkless, pointed egg-shaped, strongly five-nerved, dark green above, pale red-tinged beneath; *flowers*, in panicles at the ends of the branches; calyx top-shaped, with five small teeth, pale pink; petals five, rosy; stamens ten, with purple anthers.—B. J.

THE FRUIT-GARDEN.

VINE BORDERS.—Although much remains to be said as to the compost-yard, the collecting and conservation of manures, vegetable and organic matter in general, as well as inorganic materials, we must beg to hand

them over to a future opportunity, inasmuch as we are particularly anxious to say something about the formation of vine borders—a proceeding of some importance, and by far better carried out in the month of September than any period of the year. Dryness, as before observed, is indispensable to the chopping and working of the materials, which, if they be proper for the purpose, will require to be thus handled.

The end of August, then, and September, offers by far the best opportunity for these proceedings. Soils are at that period, even if much rain has prevailed, in a highly mellowed state, through the solar agencies; and may, consequently, be handled in any way without the danger of destroying their mechanical texture, or, in other words, of closing up their pores.

THOROUGH DRAINAGE, in the most full sense of the term, is now well known to be the only successful foundation for good vine culture. Without this, it is in vain to talk of composts; and, indeed, we have been often exceedingly annoyed to hear persons, from whom better things might be expected, talking of their splendid vine borders; such, perhaps, being mere pits of soil, gorged with rank manurial matter, ready, in their first stages of decomposition, to skin over, or close up, the interstices of the drainage material. One of the most ruinous mistakes, in our opinion, and one very frequently committed, is the sinking a deep hole for the border. Border, indeed! why not call it a vine pit. Indeed, this is not a question of bottom drainage alone; there is another and a graver point involved in the matter, and that is, the mellowing of the soil as accomplished by atmospheric influences. No man can suppose that five feet deep of soil, thrust into a damp pit, can so readily receive the ameliorating and fertilising effects of the air, as two feet of the same piled *above* the ordinary level. Now to be entirely *below* the level, and entirely *above* it, are, of course, the very polar extremes of border making; and we have put the case in strong relief in order to show the great importance of attending to levels. So we may see that it is not a question of mere quality in the soil, into which position the question has been but too frequently narrowed, but of permeability to the atmosphere; preserving and guaranteeing that free and open mechanical texture in the soil which the vine delights in.

It has been repeatedly urged in these pages, that when parties are building vineries, too much caution cannot be exercised in establishing such a floor-level as will enable the border-maker to keep his border well up. Where vines are planted *outside* the house, it is considered indispensable that they enter the house either immediately *on* the surface, or just *below* it. Certainly, it is bad practice to suffer any portion of the stem to remain above the level, exposed to the vicissitudes of the atmosphere. It is plain, then, that this surface must bear a given relation to the ground level; and that relation should be such as will enable the operator to keep the volume of his border a proper height above the surrounding *natural* levels, in order that bottom water may pass away with facility, that the border may, at least, not be made a recipient of water from contiguous surfaces; and that it may be freely exposed to a liberal circulation of air; the latter, it is obvious, tending to a dissipation of surface moisture, and better carried out with high levels than with low. The higher the floor-line, then, the higher may the border be carried, and *vice versa*.

Our readers will mostly know, that in setting out a new building, it is the practice to assume a "floor-line," so called in practice; this acts a similar part with respect to the ground plan as a scaffolding does to the building, and thus the floor-line of a hothouse generally means the highest *general* level inside. Steps may be made to descend from this in various directions; but this

it is which in the main determines the elevation of the building, and the height of the border outside. As to the necessary height of the border, that depends on the character of the locality, as before observed. As a general maxim we should say, that whatever the depth of the soil is intended to be, two-thirds may be *above* the ground level. If the subsoil is exceedingly dry, and the climate tolerably so, there is no occasion to keep it quite so high. Nevertheless, it is always safe practice; for as to the fear of drought, it is very easy to apply water or liquid manure in extreme weather, and also a good thick coating of mulch in summer, through which the water may be made to filter.

And now as to drainage. The first point to be considered, is to secure a good outlet; and if the natural surface is a tolerably good incline, this is no difficult affair. If the main drain has to be carried into an existing drain, care should be taken that such is in sound working order, and it must be examined accordingly. We are no advocates for concrete or impervious bottoms to borders; certainly, we cannot recommend them from experience, neither condemn them from well-substantiated facts; we confess, however, to a trifling amount of jealousy on their behalf. Much difference of opinion, too, exists with regard to depth of soil; some persons make them so much as five feet in depth, others not more than fifteen to eighteen inches. We have known good grapes produced under both circumstances; thus evincing that the matter of depth is not to be viewed in an isolated way, but in connection with the character of the staple of the soil, &c. If we are to suggest a depth for the border, it must be about two feet, that is to say, of soil or compost;—let it not be understood, however, that this means two feet of soil *below* the ground level, but simply two feet in depth at whatever level.

As to the situation and character of the drains. The best practice, we think, is to run two lines of drain parallel with the frontage of the house, providing cross outlets of a subordinate character as a communication between the two, about six feet apart. Thus, supposing the border to be eighteen feet in width (if wider, so much the better), we would place one of the longitudinal mains at about six feet from the frontage, and parallel with it. The other, of course, would be at the border edge. The first-named would be of much benefit to the vines when young, and is, we think, a most necessary course; for the distant, or marginal drains, do not act sufficiently speedy in the case of sudden precipitation of moisture. Indeed, many good practitioners make their borders by a progressive plan; that is to say, about one-third parallel with the house first, in the second or third year a second portion, and the remainder when deemed necessary. This is but an unsightly proceeding, however, and the course we have to recommend entirely supersedes the necessity of it. The bottom of the excavation must, of course, be formed to an incline, nearly of the same character as the surface will be when completed. Nevertheless, it is well, we think, to allow a somewhat greater depth at the back, or next the house, than at the front, say nearly a foot. The portion of the border contiguous to the house is generally somewhat drier than the other portions; and, moreover, vines like to nestle their roots about the walls at all times, evincing a partiality for bricks and mortar. As for the incline, it may be considered good practice so to raise the border, or bed of soil, as that the bottom of the soil at back is nearly as high as the front walk, if there be one. The bottom incline being formed, we would place any ordinary flat stones, slates, or other imperishable material, all over the surface; first testing the bottom, and securing the whole against any settlements, which would, of course, tend to derange both the drainage and the soil. Concrete, as before observed, has been highly recommended

by some first-rate men; one of its strongest advocates being no less a person than Mr. Fleming, of Trentham, a deservedly high authority. We, however, beg to recommend for the present what was before named. Flag stones, thin slates, &c., may be placed all over the surface of the subsoil, and we would not have them more than a couple of feet square; certainly not in a continuous way, or it would be better to adopt concrete itself. These should be made perfectly even, so that if bottom waters should arise, such may speedily pass off into the drains.

We must now defer the remaining advice about filling in soils, &c., for a week or two, when we will fully carry out the subject.

R. ERRINGTON.

THE FLOWER-GARDEN.

COMPANION TO THE CALENDAR FOR AUGUST.—*Anemones*, *sow*, is the first item, and the common garden *Anemones* are meant. When seeds of these, selected from the best coloured sorts, are sown in April, May, at the beginning of July, and again in August, the chances are that a bed, or row of them will be in bloom all the year round, at least every month in the year, if it is a mild winter. By planting roots of them monthly, from the end of August to the beginning of May, a succession of flowers may also be expected. More so, however, from planting the roots, as the growth of seedlings depend much on the weather during the summer, and also in part on the kind of soil. In light dry soil seeds and seedlings make little progress in very hot weather; and I have known a bed of them sown in May which did not vegetate at all till after St. Swithin's-day. Were it not for the purpose of getting new and better sorts, I would not indulge much in sowing these seeds on light soils; and it need hardly be told to cottagers that the roots will do just as well left in the ground from year to year as to be taken up and dried, as we gardeners often do, and are compelled to do at times, in order to renew the beds or borders with fresh soil, &c.

Auriculas.—The flower-gardener beats the florist out-and-out with *Auriculas*. Plants twice the size of potted ones all along the sides of the borders, and all hues and colours—powder-eyes, belts, pin-heads and all—are seen to perfection on a fine April day by the hundreds—a regular show of itself, and when the show is over, the whole are put out of sight till next February or March; and what the Calendar means for them in August is only to see that all is right with them in their privacy; and seedlings of them, now coming up as thick as lettuces on a north shady border, are to be pricked out in rows four inches apart, and two inches plant from plant. No frames or glasses are wanted for this kind of work; but the north side of a wall, or wooden paling, is the best place for them, as it is more uniform throughout the winter. I recollect, many years ago, having had charge of a bed of *Auricula* seedlings, in which there were some thousands. The bed was in the melon, or framing-ground, behind a close wood-fence, and raised eighteen inches above the general level,—it was about eighteen inches wide, and a wooden cover on hinges could be let down on the bed in a short time to keep off too much wet and snow. The plan was pursued for many years at that place, and I have never seen finer *Auriculas* since; but there was something in the soil which suited them; in short, it was an *Auricula* soil. We are all too philosophical in these days to admit the doctrine of "*something*," but there is something in it, nevertheless, whether we choose to own it or not.

Bulbs.—It is recommended to sow seeds of these, and to plant annuals in the beds they occupied; but that is merely to draw attention to them; any other plant will do to fill up with as well. Now-a-days we seldom

see whole beds devoted to summer bulbs only: something else is put in between the bulbs in April or May. The bulbous *Irises* are very useful in June and beginning of July, and they come of all colours from seed, which is best sown as soon as it is ripe, and that is the easiest way with all the Daffodil tribe, or *Narcissus* of sorts, *Gladioli* and *Irids* in general; also, *Crown Imperials*, and so down to the common *Crocuses*, the whole of which will do very well in a bed of light earth, but much better if sown in pots, when one knows how to manage seedlings in them. Pots with these hardy seeds should be plunged to the rim in a border, or some out-of-the-way place, till October; so that dry weather has little effect on them. The seedlings come up usually by the time it is natural for the parent-bulbs to grow; so that, if it is preferred, these seeds need not be sown till the beginning of October, and then pots should be used for them, and the shelter of a cold frame.

Carnation layers cut from the old plants, and bed them in a nursery-border as soon as they are fit or well-rooted; and more layers of them, and also of *Picotees*, may still be made; this last crop, and part of the first-made layers, may be left on the shoots till next February, if the stools are in the kitchen-garden or reserve-ground; but old plants of these being unsightly in the flower-garden, I would have all layers removed from them, and I would advise the removal of the old plants forthwith, but still would not destroy them altogether; as, if I could get any spare corner for them, they would furnish cut-flowers for a year or two longer. Many people pot these layers and keep them so through the winter; but for the flower-garden I prefer them as above.

Cuttings of flower-garden plants put in early in the month. One might fill several pages with a mere enumeration of the plants that will root from cuttings out-of-doors if put in before the middle of August. Almost every thing, from the common laurel to the fairy rose, will now root if properly attended to. Many years ago, I called, about this time of the year, to see a very picturesque garden high up on the banks of the Findhorn, in Murrayshire, and the whole force of the garden-men were very busy putting in cuttings of the common laurel by the thousand. I never saw such a scene before or since; so many hands were lopping away in the shrubberies, others were preparing the cuttings, while a third lot were digging the ground, and "planting the cuttings by the spade," as they say in Scotland; that is, as Mr. Cobbett used to recommend cottager's wives to plant cabbages and potatoes, by putting in the cuttings as the digging proceeded. Thus, when an opening is made at one end or side of a piece of ground, then dig a spadeful across the piece, stretch a line on the edge of this and make a cut along the line, place the cuttings against the cut, three or four inches apart and six inches deep, press the soil well against the cuttings so that they are as firmly fixed as if they were rooted, then dig another space six, eight, or nine inches wide, according to the size of the cuttings; stretch the line again, cut a clean edge along the line, and plant the second row of cuttings, and so on to the end of your ground. In this garden these cuttings were intended to remain undisturbed for three years, when they would be all removed for planting out in the woods as people plant *Rhododendrons* now-a-days: I must not omit to say that the cuttings were made in the old-fashioned style of having one joint of the old or last year's wood left at the bottom, unless they were side-shoots, and pulled out of the socket so as to have a heel of hard wood, all the rest being that season's growth, and from six to ten inches long, about half of which was fixed in the ground. They were neither watered, nor had any more attention, except to keep them clear from weeds, and I was told that not one out of a thousand of them would fail. I never go into a nursery and see stools of laurels kept

for getting layers from, without recalling to mind this wholesale way of increasing the laurel, and many other common things, at Relucas, for I think that was the name of the place. It belonged to the late Sir Thomas Dick Lander, a well-known name in the literary and scientific world. Now, for amateurs and all who have had little practice in growing cuttings of hardy things for the flower-garden and shrubberies, I would strongly advise this way of making their cuttings. The plan is described in all the old books on gardening; and although we of the present day have improved many of the old ways of doing things, I am quite sure there is no easier or more safe plan than this, of either retaining one joint of the old wood to the bottom of the cutting, or pulling it out of the socket so as to have a heel of hard wood. The reason is, that the ripe part at the bottom is much less likely to damp than a bottom of fresh, green wood, and also the ripe part being so much harder, it will not suck up so much moisture to cause damp or goutiness in the upper part of the cutting. There is hardly an evergreen shrub you can mention but will grow from August and September cuttings. Then perennial plants succeed, and thousands of them will come from cuttings, some under hand-glass and some without; others of them that have flowered in the early part of the season may be increased by taking them up about the end of the month, and dividing their rooted parts into so many pieces to be planted in light nursing earth, so to be ready to remove into the garden or pleasure-ground next spring, when the beds and borders are dressed for the season.

After all this, *Seeds* and *Seedlings* must be thought of; and, first of all, let us take the hardiest—the evergreen *Berberis*, or, what some call, *Mahonia*. *Berberis fascicularis* is the handsomest flowering one of all our hardy evergreens, and although it might be reared from seeds as easily as mustard and cress, so to be planted out by the thousand, besides every nursery being full of it, yet it is rarely seen as underwood in plantations, or under trees in gardens where neither grass or weeds would grow, although it will grow any where, wet or dry, rich or poor, shaded or not shaded, and still look very green and beautiful. It grows very fast in pure sand, and if it stands the sea-breeze it might be planted to fix the shifting sand-banks on some of our coasts. Now is the time to look out for it. It fruits as freely as the bramble; the berries are now turning colour, and the birds take to them before they are quite ripe; but if they are kept from the birds, a good-sized bush will produce a thousand plants, and the only secret in getting the seeds to grow is to sow them as soon as they are ripe. Indeed, the best way is to draw a drill as if for sweet peas, and sow them in it the very day they are gathered. A drill is better than a bed, and if you have more than one drill, four inches will be enough space between them. The seedlings will not come up till next April or May, and if you sow them as thick as mustard they will take no harm in drills, where they may remain a year or two if you are not in a great hurry about them. Seeds of all the *Nemophilas*, and all other *Californian annuals*, should be sown twice this month, and again in September, to flower next April and May. *Candytufts*, *Erysimum*, *Stocks*, and *Navelworts*, are four most useful things for transplanting into flower-beds next May, along with "bedding-plants," from seed-beds sown this month.

Out of a number of routine rememberings I fix next on *gravel*. Weed and roll weekly, very odd advice to our garden-men here who take in *THE COTTAGE GARDENER*, for they seldom think of such a thing. The weeding of the walks falls to my share of the work; an expensive weeder, certainly; but still I kept them down for the last six years, so that five shillings only are charged for weeding the walks in the garden account for each year, and that is hardly a shilling per mile per annum. But

concrete-walks, like those we have here, do not allow weeds to come up, and I mention *gravel* more for the purpose of saying how new concrete-walks should be managed the first season, as I hear of a great many of them having been made lately, and in one place, I have been told by the proprietor himself, that the new walks are better than those here, and he asks me to convince myself of the fact by going to see them. But no wonder. This gentleman has had more to do in concrete for some years than all the gardeners in England put together, being at the head of the celebrated building firm of Lucas and Brothers, of London and Norwich, and having seen our whole process here, from first to last, whilst building the beautiful "Albert Tower," &c., he has, no doubt, improved on our practice, and having got the lead, he will keep a-head of us probably; therefore, if St. Swithin has visited him two seasons, as he has done us here, he may probably stand in need of our advice in the matter of new concrete-walks the first season, and here it is with an anecdote in point. The building of the Albert Tower, and a great deal besides, was only determined upon at the eleventh hour, and at it they went, heart and hand (Crystal-Palace-fashion), and in two months the flagstaff was hoisted on the summit of the tower, and more work was finished in those two months than could be done by less energetic hands in twelve months, and, indeed, more than they themselves did for the twelve months preceding. All this time the poor gardeners were half smothered in clouds of dust, and showers of bricks and stones, from the tools of the workmen; flower-beds under the bustle were boarded over or covered with canvass and what-not; terrace-walks, grass and gravel, came in for a share of the frolic, and last of all a beautiful broad terrace-walk had the last finishing touches just as the Prince and party were entering the "Norwich Lodge," two miles off:—a neck-or-nothing job, but we won by a head and that was all; and the whole party trod over it in less than two hours, and, for aught that I know, took it for a ten years' old Broadway. In three weeks after this all our new walks and terraces were flooded for several days in succession, but we escaped better than I expected, and had very little to repair, although one of the new walks leads down the face of a long sloping bank. A new terrace on a dead level, without a drain, but having a fall to one side of *three half-inches in sixteen feet*, answered completely. The whole of the water gathered to the lower side, the whole length of which is an *invisible drain*, which I shall describe one day. I am now satisfied that one-inch fall in twenty feet is quite enough to draw off the water from the heaviest rains over a concrete-terrace or walk. If the terrace is forty feet wide, an inch fall from the middle to each side will do, or the two inches may fall from one side to the other either way, and no one can perceive that the gravel is not laid quite level. If the rains had washed off any of the gravel or concrete, we would scrape the sides and bottom, and lay down fresh-made concrete, and colour it with part of the old gravel, so that no fresh marks could be seen after the whole was rolled. Never attempt to make up a flaw in these walks with old or spent concrete, or with that which was washed off.

The rest of the work for this month is so much of the every-day routine character, that I need not extend my directions farther to-day. I shall, therefore, conclude with a piece of good news and an earnest advice. For the last four months no reader of THE COTTAGE GARDENER has written for private information—a most gratifying fact to all of us. The advice refers to very humble cottagers who write occasionally to ask to see gardens, or to get a son or brother introduced to large gardens, or, indeed, about any private affair; the reason why such letters are never answered is, that no stamped envelope accompanies the request, cottagers thinking it

would be insulting great people to pay such letters. If you ask the Lord Chancellor for advice be sure to send a stamped envelope.
D. BEATON.

GREENHOUSE AND WINDOW GARDENING.

RAISING PLANTS FROM EXOTIC SEEDS.—Having promised to refer to some matters a fortnight ago, and finding no room to do so last week, I return to them once more *now*, though all things considered it is not the most opportune period for doing so. Of all times spring is the best for the sowing of exotic seeds, with which we are not well acquainted, as then there is, in most cases, plenty of time for getting the young plants strong and hardy before winter. But on that account, merely, I would not defer the sowing of seeds received during July and August, as early germinating ones will yet be sufficiently strong to stand the winter, with a little extra attention; and those which will require several months to germinate, will not be in a condition to do so until the shortest days are past.

The first requisite to practical success, is the *receiving the seeds sound, undiminished as little as possible in their vital energies*. This matter should be explained to every friend whom you may commission to send seeds to you from abroad. *Heat, moisture, and air*, are the essentials for a healthy germination. The very opposite of these, an uniform low temperature, dryness, exclusion from air, and in the present case, more especially, if changeable in its hygrometric qualities, and I may add absence from the direct rays of the sunbeam, are essential to the prolonged vitality of seeds. True, in nature, one or more of these circumstances may be present, and yet the seed retain its vitality. Thus, seeds raised from great depths in the earth, where they had a sufficiency of moisture and even of heat, germinated *only* when exposed to the air and its oxygen. We can expect no such result in our seed packages. If moisture and heat gets at them, air will get too; and sudden transitions, from heat to cold, from moisture to dryness, and *vice versa*, will soon settle the whole affair, and render our labour in tending the seedlings small indeed. The danger is slight when, however great the distance, the space traversed is confined to a similar latitude; it is only a little increased when taken at once from a hot latitude to a colder one, and from a colder to a hot one. In these cases wrapping the seeds in several folds of strong brown paper, and then suspending them in a canvass bag in a cool airy place where moisture is not likely to reach them, will generally be sufficient. But such precautions will not be safe when the extremes are not only great and sudden, but repeated; such as sending seeds from climates similar to our own, from China and India, round the Cape of Good Hope, thus passing twice through the tropics. In these circumstances, the seeds must be enclosed in a good non-absorbing-of-moisture, and a good non-conducting-of-heat substance; and for this nothing has been found better than packing the seeds in a wooden box, and enclosing that box in one or two more, leaving several inches between them, and cramming the interstices with oven-dried clay or pounded charcoal. As a further security, the seeds may remain in their nuts or shells, provided these are properly dried before packing.

The seeds being sound, the principal stimulus to their germination is heat. Whatever be the temperature in which the plant rejoices, a little more heat may be safely given to promote germination, and more especially when the seeds are either old, or brought from a great distance. Even the seeds of many hardy plants will bear a strong heat with impunity, and the seedlings will be little the worse, if, as soon as they are up, they

are hardened off by degrees. If this is not done, a weak and languishing habit of growth is superinduced, ending in premature decay. Amateurs should recollect that the hotbed is just as fatal to hardy constitutioned plants, as our northern climate would be to a tender tropical one. Even in germinating seeds, if not well acquainted with them, it is safer to use a bottom heat of 60° or 70° in preference to 90°. I have sown hardy Californian seeds in the latter heat, and they did not even vegetate so well as those in a temperature of 50°. In germinating seeds, there is no other heat so good as a sweet hotbed made of dung and leaves. The full rationale of this I am afraid now to enter upon; of the fact there can be no doubt. When once fairly up, the matters adverted to last week must come under consideration. Here the new beginner is pretty well upon a level with the oldest of us. By studying the latitude of a plant, and the altitude in which it is found, we may come near the general temperature required; but what is wanted is the *general highest* and *general lowest* temperatures, with the state of the atmosphere that obtains in these circumstances. An insight into these matters is worth loads of practical directions. There are few new ideas, fewer decided improvements in our art, for the instigation of which we practicals are not indebted to amateurs who had leisure and enthusiasm at their command. Here is a large, comparatively untrodden field ready for their entering upon. A plant enjoying a clear sky, a high temperature, with only a limited supply of moisture, will afterwards endure an amount of moisture and cold that would ruin one grown in a cloudier, moister air. Hence the true principle of acclimatising rather tender plants, is to have no more growth than the sun can solidify. After the plants are safely potted off, the growing temperature must be regulated by the considerations adverted to last week; for though, as a broad rule, we were to recommend plants within 18° of the tropics to be kept in a hot stove, those beyond, and to the 26° of latitude, to have a cool stove house, or a warm greenhouse, and those for nearly 10° more to have a greenhouse; while beyond that, until approaching our own latitude, the plants should be protected in cold pits, or against walls; still we could give no general rule; as the altitude, the nature of the plant, whether annual or perennial, deciduous or evergreen, must all be taken into consideration, and even then nothing certain could be demonstrated until practical details have been reached, as plants found in similar circumstances often differ as to their hardiness.

The next thing necessary in germinating such seeds is *moisture*. This is necessary in all cases; we stop not here to inquire how, for that has several times been referred to, but its application must be given with more care in the case of foreign seeds. For instance, here are some so horny, shelly, and hard, that we may bury them for months before the shell shall be burst by the embryo, because moisture cannot reach it. In such a case, as delays are not pleasant, saying nothing of their being dangerous, the best plan is to scrape a hole in the shell, by means of a file, and then place the seed for a few hours in water of a temperature of 100° before sowing. Here, again, are a number of seeds from pod-bearing plants, each and every of them as hard as a piece of flint; these may be soaked in water of the temperature of 130° for a couple of days, or even longer, until the moisture has had such free access as to promote the swelling of the seed to a certain extent, for if continued so long as until vegetation be commenced, it will often be injurious from the change effected in moving it into soil. But here are a number of seeds, distinguished more for softness than hardness, more for smallness than largeness, and that you are rather fearful have suffered something in vital powers; soak them in water, and you save yourselves all further trouble. It can

neither be absorbed so quickly without danger, or assimilated, and hence it only hastens decomposition. The *slowness* with which moisture is absorbed is their only chance of safety. The earth in which they are sown, therefore, should be neither damp nor dry, but just the happy medium between the two, and from *that* the seed should be allowed to derive all the moisture it requires for swelling and bursting its integuments. I have sown old and imported seeds in this manner, and scarcely had a failure; have sown from the same packet, and assisted them with watering, and got not one plant to say "thank you" to the water pail.

The last requisite we mention is *air*. The husbandman is aware of this. In any case, but especially if his soil is heavy, he will not sow if his land is wet. The rearer of plants from foreign seeds should be careful of two things, first, that his seeds are sown shallow; and, secondly, that the covering should consist of soil of an open porous nature. The chief reason for covering is to secure moisture. Hence, many adopt the principle that that is its only use, and in many examples it would seem to be so. Still I do not altogether go that length; for once the chemical changes have begun in the seed, the action of the sunbeams would accelerate these changes too quickly. There is, in such circumstances, a starving in the midst of plenty, a greater evolution of gases than the embryo can either sustain or assimilate. Be that as it may, for much may be said on both sides, I hesitate not to give the following rule as respects unknown seeds. Drain the pots well, fill with porous soil, neither wet nor dry, press the seeds slightly on its surface, cover the pot with a square of glass, and on that place any opaque substance, such as a piece of paper, or a little moss. Set the pot in a shady, warm corner, and somewhat moist withal, and if possible let all the moisture given to the seed be derived from surrounding media, until the plant appears. The glass will prevent evaporation from the soil, and yet allow the admission of air: while in such circumstances, the pot will absorb quite as much moisture as it parts with, and, therefore, the soil will contain just enough slowly to swell the integuments. Whether the oxygen necessary for germination is procured from the atmosphere, or from the power which the embryo has of decomposing the water with which it comes in contact, are interesting questions to the man of science. But be the fact how it may, the above methods will be found equally successful.

R. FISH.

HOTHOUSE DEPARTMENT.

EXOTIC ORCHIDACEÆ.

ORCHIDS THAT THRIVE WELL IN POTS.

PERISTERIA CERINA (Wax-like P.); Spanish Main. A fine plant, with large leaves, and medium-sized deep green pseudo-bulbs. The flowers are produced in a cluster at the base of the plant. They look like a brood of young chickens. The colour is a clear, pale yellow, with much the appearance of being made of wax, hence the specific name. It is a handsome species, fragrant, and worthy of cultivation. 3ls. 6d.

P. ELATA (Tall P.); Panama.—The flowers of this fine plant always please even those who do not love flowers generally. When they are open, the top and wings of the column have much the appearance of a dove in miniature, on account of which it is called the "Dove Plant" in this country, and by the natives "*El Spirito Sancto*." The flowers are pure white, with a few pinkish spots on the lip; the flower-stems spring from the base of the large pseudo-bulbs, and grow four feet high, producing from ten to fifteen flowers, each opening in succession, and thus continuing in bloom for six or eight weeks, giving forth all the time an

agreeable, peculiar perfume. The leaves are large, frequently three or four feet long, and six inches wide in the centre. They spring upwards for more than half their length, and then bend gracefully downwards. These noble, graceful leaves render the plant handsome even when not in flower. When the plants are healthy and strong, the pseudo-bulbs are nearly as large as a turkey's egg, and are of a bright, lively green. Wherever there is room to grow this really fine species it ought to make one of the collection. A moderately strong plant may be obtained for 42s., but a blooming plant is usually priced 63s.

P. GUTTATA (Spotted P.); Rio Janeiro.—The flowers of this handsome species are large, pendulous, and of a pale yellow colour, especially when fading. They are thickly spotted with dull purple, and are powerfully fragrant. 42s.

P. PENDULA (Drooping P.); Panama.—Sepals and petals of a greenish-white outside, tinged with pink within, and spotted with clear purple. They have a pleasing fragrance, and are produced thickly on a drooping stem six or eight inches long. This has the largest flowers of any species of the genus—measuring full two inches across. 42s.

P. STAPELIOIDES (Stapelia-like P.); S. America.—The flowers are of a pleasing yellowish-brown colour, thickly spotted with dark brown. They open wider than most of the genus, having a star-like appearance. This causes them to look like the flowers of a *Stapelia*. They have also a powerful scent, like the flowers of that genus, which, when approached too closely, becomes offensive to delicate nerves. 31s. 6d.

Culture.—Soil.—As the whole of this genus is of a strong, large habit, they require a rather richer compost to grow them in than most orchids. We have found them to thrive best in a mixture of very fibrous loam, rough pieces of sandy peat, and the half-decayed leaves of the beech or oak, in equal parts, adding about one-eighth of pieces of charcoal about the size of a walnut, and a portion of broken potsherds. These latter are used to keep the rest of the compost open and porous, to allow the necessary waterings to pass quickly through it. The pots should be large in proportion to the size of the plants, especially for *Peristeria elata*. They should be well drained, but not so much as is recommended for *Cattleyas*, *Oncidiums*, and most other orchids. When potted, a difference should be made. The "Dove Plant" sends up its flower-stems away from the soil, therefore it should be potted pretty nearly level with the rim of the pot; but the flower-spikes of the rest being of a drooping character, the plants should be placed upon a mound of the compost in the centre of their respective pots. The flower-scapes will then have space to grow downwards, without coming in contact with the sides of the pot, or being in danger of damping off, as when the plants are potted level. Water must never be applied extravagantly, because the roots are tender, and soon rot if the compost is too wet or soddened for any length of time. This will take place even when the plants are growing rapidly, therefore great care should be taken that the soil is never swampy with too much water. The plants will be much benefited if the surface is frequently stirred, to keep the surface free and open, only be careful not to bruise the young and tender roots with the instrument used for the operation.

Heat during Growth.—Our readers will observe that these plants are found in the warmest parts of Central America; they, consequently, require great heat during their summer growth. Let it be 75° to 80° by day, and allow the heat to fall ten degrees at night.

Heat when at Rest.—This is also found now to be advisable to be much lower than in the growing season: 60° by day and 55° by night will be the proper and health-preserving temperatures. During this season of

rest a large reduction of water is absolutely necessary; for if too much is injurious when the growth is going on, and the plants require food in quantity to increase their size, how much more so is it dangerous to apply it in excess when the growths are completed, and the roots in a state of rest.

T. APPEBY.

FLORISTS' FLOWERS.

MR. GLENNY ON FLORISTS' FLOWERS.

ROSES (*Mr. Burgess, Colchester*).—Roses to be sent for opinion should be gathered before they are quite open. Many of those sent had come to pieces, and the box was full of petals. Perhaps, however, this was one proof of the value of thick petals. No. 2, a small very double rose of dead crimson, with good leathery petals, is new, and, looking at the hundreds of flimsy things we have, we may say, good, notwithstanding it is a little sunk in the centre; thickness of petal will give it that estimable quality, standing a long time in bloom. Of course we can know nothing of its habit. No. 39, a rich carmine, is another which stood the carriage, and has a good thick petal, is very double, and worthy of cultivation; it will, at least, enable us to throw some flimsy one away. This is also a little low in the centre, and somewhat larger than the other. No. 19, which is something like the last, but has a purply shade on the carmine, is a kind which we should try the growth of. All this, however, is presuming the habit to be unexceptionable. The rest cannot be spoken of from their condition. We shall place them in water, and see if any of the buds open.

The *Dahlia* you sent is too much like some we have to be of any great value, but is a sound useful quality, like *Lady Grenville* and others of that red and white fancy class. We should like to see the roses over again, gathered in a half-opened state, packed light on their sides, with damp moss; because on so short a journey there is not time to heat.

GERANIUMS (*J. B. P.*).—It is too late to judge the true character of seedlings opening now, except that so far as all those sent are concerned, the narrow bottom petal condemns the whole. No *Geranium* can be useful unless the bottom petals be short and broad, and the bloom forms something like a round flower. The hanging of the lower lip, or narrow petals, cannot be tolerated now. The flowers sent for name form such a contrast to the seedlings, that we wonder how *J. B. P.* would think an opinion necessary. No. 1, is *Crusader*; No. 2, is *Christobel*; No. 3, *Duke of Cornwall*; whoever sent them for show flowers did justice; No. 4, we do not know; 5, is *Prince of Orange*, valued for its colour; and 6, is *Orion*. We do not know the remainder. The seedlings may be thrown away.

CALCEOLARIAS (*J. F., Bedford*).—No advance. They are clearly all herbaceous varieties. We wish some good, persevering florist, or amateur, would go back to the true shrubby kinds, and begin again. The Horticultural Society did more harm by giving prizes for herbaceous, as well as shrubby, kinds, than they can ever do good to this flower by seven years liberal encouragement to shrubby varieties only. It got men into the bad habit of growing the good and the bad, and perpetuated a race of unmeaning, worthless *Calceolarias*, with neither one character nor the other.

STRIPED PANSIES.—Societies for the encouragement of seedlings, as now composed, would not recognise the striped Pansies, perhaps, but we look upon them as novelties, which may become as complete a class as the fancy class of Dahlias; and when we first gave prizes for them in a show, where we had the control, all those who had none were loud in their grumbling at our encouraging worthless, rough, starry, semi-double things;

but it is our turn to show those who complained, that they are themselves growers and raisers, and that the fancy Dahlias are rapidly approaching the original show kinds in quality, and greatly excel them in brilliancy. *M. N.*, who sends us some *striped Pansies*, has got into a new strain, but it is a bad one; there is nothing distinct about them; they are cloudy as well as stripy. *No. 7* may do to seed from, but Salter's collection contains a dozen better than any forwarded by *M. N.* We prognosticate a fancy class of *Pansies*, and they indicate an advance quite equal to that made by fancy Dahlias and fancy Geraniums.

PINK (*John E.*)—We have no opinion of size; chance may give us a Pink as large as a Picotee; in fact, we have one quite as large, but it is a confused mass of petals, which could never, we think, be placed in any form by the best dresser. The two sent by *J. E.* are of the same kind, but very much worse, inasmuch as they have deeply serrated edges.

PINK (*C. M. W.*)—Not so good as Turner's *Master-piece*, and on the same way. *Picotee* worthless; for though tolerably clear on the upper surface of the petals, strongly striped underneath; and this results in bars right through in three blooms out of four; besides, the colour underneath spoils by reflecting on the surface of the petal under it. We think the bloom sent has been the only one that could be found so free from bars on the surface.

BOX OF DAHLIAS (*T.*)—The finest Dahlia that was ever raised will not always come well at first. *Barmaid*, with two rows of petals; *Queen of the West*, all but single; *Mrs. Hansard*, ugly and ill-formed; *King of Dahlias*, oval instead of round; and other popular flowers, equally worthless, are received. Our correspondent must be thoroughly inexperienced if he fancies these early specimens any evidence of a flower's quality. We could send him in return *Sir F. Bathurst*, *Magnificent*, *Mr. Seldon*, *Fearless*, *Essex Triumph*, *Princess Radzville*, and all our very best tried and approved varieties, quite as faulty. "There's a good time coming boys, wait a little longer."

HOLLYHOCKS (*MR. PARSON'S SEED*).—*H. S.* has no right to grumble if he can obtain such flowers as those sent from purchased seed. We shall be happy to give an opinion on a few of the best, when sent in good condition and full bloom. The blooms sent are too small, evidently from starved plants; size cannot be attained without good cultivation. The best that can be done now is to water them with manure water; a spade full of decayed dung to ten gallons of water, allowed to soak for a day, and well stirred; give them a good watering with this, and if the ground be at all hard, fork the surface a little before the watering. The colours of *G. 17*, *M. 1*, and *G. 21*, are promising, and the flowers close.

FALCONBRIDGE CARNATION (*Turner*).—New, striking in colour, and, for so deep a colour, good in the white. It is the most desirable Carnation that we have seen for some time. It is of the full size, tolerably well built, smooth on the edge, and unlike everything else we have.

G. G.

FLORISTS' FLOWERS CULTURE.

AURICULAS AND POLYANTHUSES.—Keep these flowers yet in their summer position, behind a north or north-east wall. Such plants as require it should now be potted; these will be such as were offsets last autumn, and are stout healthy plants. This late potting will encourage them to grow stronger, and will tend to prevent their showing flowers. Seedlings of last year should also have a shift now for the same reasons. *Seedling Auriculas* of this year, if they have done well, will be nice little stocky plants, and may be potted off

out of the seed pans into small pots $3\frac{1}{2}$ inches wide. The strongest will, probably, flower in the spring. *Seedling Polyanthuses* need not be potted singly, but should be planted out into a bed of rich, light earth; each plant should be allowed four or five inches square to grow in. In this bed they may be allowed to flower, and when that takes place, the best, or rather such as possess the requisite properties, should be taken up, carefully potted, and attended to in the same way as the named varieties, till their good properties have been fully proved. In whatever state the plants are, whether named varieties or seedlings, constant attention must be given to keep them clear of all kinds of insects or reptiles that feed upon them. Slugs must be diligently looked for, and destroyed as soon as they are found. The green-fly will, during dry weather at this time of the year, sometimes infest them. Tobacco-water, reduced to a moderate strength, and gently showered upon them from a fine rosed syringe, is the most destructive agent against this pest. It should be applied when the soil in the pots is moderately dry. In that state they will bear a pretty strong syringing, to wash off the dead insects and cleanse the leaves from the tobacco-water. The smoke from the leaves of the same plant (tobacco) will, also, kill them; but they must first be placed in a cold frame, in order to confine the smoke a sufficient time to effect the purpose. Worms, if they appear, may be easily got rid of by watering with lime water. Dead, or decaying leaves, either from the plants themselves, or from trees or shrubs near where they stand, should be daily removed. If carelessly allowed to remain, there is danger of the process of decomposition affecting the living healthy leaves themselves. It, therefore, behoves the cultivator to look over his stock of plants almost daily, and remove those dead and dying leaves.

Water.—This, during dry weather, must be regularly supplied in such quantities as they require, and no more. In the comparatively shaded situation in which these plants are placed very small quantities of water will be necessary, still that quantity must be supplied. Should moss or weeds appear on the surface of the soil, they should be instantly removed, by stirring the surface to remove the moss, and carefully drawing up the weeds. With these attentions the plants will thrive, and continue in a healthy condition till the time arrives to remove them into their winter quarters.

CARNATIONS AND PICOTEEES will now be in great perfection, the season being at least a fortnight later than usual. The wet, dark weather that has prevailed lately, has also had the effect of prolonging the blooming season. Continue to protect the blooms from heavy rains, driving showers, and bright sunshine. By such shelter the season of flowering may be considerably prolonged. As the flowers fade, unless seed is wanted, let them be cut off. Save seed from the most perfect flowers, and the best varieties only. *Layering*, if not already finished, must, without delay, be diligently attended to. We must refer to former volumes of *THE COTTAGE GARDENER* for the mode of performing this interesting and pleasing operation. As soon as the layering is finished, give a gentle watering to settle the soil close to the layers. If there are too many layers, or if any shoots are accidentally cut clean through, they may be made into *pipings*, a technical term for a cutting of a carnation, picotee, or a pink. Three joints will be sufficient to form a piping, the lowest pair must be cut off, and they should be then inserted into a 4-inch pot close to the side; place them under a hand-light, or in a frame set upon a spent hotbed. Here they will root and make nice plants, though it must be admitted that for carnations and picotees, layering is the most certain way to increase them.

DAHLIAS.—These, the glory of the autumnal flower-

garden, will be advancing in growth, and will soon be showing bloom. We have so lately dwelt somewhat largely upon the culture of the noble flower, that there is no necessity to enter fully into details. All that is necessary now, is in the way of remembrance. See that every plant is well mulched with short litter, that the stakes are strong and long enough, and sufficiently numerous to support not only the main stem, but also, when particularly heavy and strong, the side branches. Thin the branches and flower-buds so as to throw the strength of the plant into the proper channel to produce fine flowers. Prepare shelter for each flower, either in the most simple form of an inverted garden pot, or the more elaborate cap made of wire and oiled canvass or cotton, or the most effectual of all, a square box with a glass front, and a groove cut in the bottom to admit the flower-stalk with the flower inside.

The various insects that prey upon, and consequently disfigure the bloom, must be destroyed, or their ravages prevented by using precautions, traps, &c., fully described in the paper alluded to.

FUCHSIAS.—These are now in great beauty. They require shading from the mid-day sun, and abundance of water at the roots. Should any appear to be suffering from the attacks of the red spider, which is apt to prevail now, remove them instantly from the greenhouse, to prevent the insects spreading their colonies to the neighbouring plants.

New kinds may yet be propagated by cutting in the usual way. Now is the time to attempt to improve the kinds by impregnating the best with such as are likely to improve the progeny. Seed, as soon as it is ripe, should be gathered and cleaned, and put by till spring.

T. APPLEBY.

THE KITCHEN-GARDEN.

ROUTINE WORK.—Sow a sufficient quantity of *Cabbage* the beginning of the month, dredge the young plants that are now up with charred dust or dry wood-ashes and soot, to prevent the ravages of the fly, and prick out, as soon as the plants can be fairly handled, a few inches apart. Do not forget to plant in succession both *Cauliflowers* and *Cape Brocoli*, which will come in at the right season for winter storing. Plant, also, *Coleworts* freely; and pay good attention to *Celery* in every stage of its growth, keeping it clear of side-suckers, maintaining an open surface, and applying water and stimulants freely. Sow *American* and *Normandy Cress*; and continue to sow *small Salad* in shady situations, as well as *Radishes*. Sow *Endive* in full crop for winter use. *Hardy Lettuce* for standing the winter should be sown from the 8th to the 20th of this month, the 12th being generally about the safest time for sowing the main crop; but as locality, variation of season, and the state of the soil have all their influences, it is always safest to make two or three small sowings. Still sow freely of the small, quick kind of *Turnip*. Keep the hoe well going amongst the growing crops. Sow the main crop of *Spinach* for winter use about the 12th on a well-prepared and manured border or warm situation; sow in drills from twelve to eighteen inches apart, the distance to be regulated by the condition of the soil; if the soil is in a good state, that is, well and deeply pulverized, with a liberal application of manure, the drills will require to be eighteen inches apart. The prickly varieties should be sown for winter use; and if the earth is kept well and frequently stirred between and about the plants throughout autumn and winter on all suitable occasions, and kept clear of decayed leaves, a healthy luxuriance will be maintained, and an abundance of large leaves will be the constant produce. JAMES BARNES.

MISCELLANEOUS INFORMATION.

OUR VILLAGERS.

By the Authoress of "My Flowers," &c.

THE first dwelling at the entrance of the village is a little low cottage, comprising only two rooms, both on the ground floor, and a roughly constructed wood-house. It stands with its gable to the road, and a small garden in front, on the brow of a rising ground, looking down upon a stretch of arable land, a great deal of wooded ground, and a line of green hills in the distance. It is fully open to the south, and the situation is one of exposure to the western gales also, which beat against the casements, and cause the slight cottage-door to tremble. Immediately opposite to this little dwelling, on the other side of the narrow road, stands the tottering framework of a cartshed, close to a large ash-pollard of a great age, and considerable height for that description of tree.

The widow of a barge-man has lived for many years in this little atom of a cottage, with her four children; for in some of England's cottage homes no space for an increasing or growing family is allowed for—one sleeping apartment and one kitchen is deemed enough. When the husband died the children were very young; but the Scripture promise stands unchanged. The little family have grown up and thriven upon parish allowance, and the mother's scanty earnings as a needlewoman; she is always the perfection of neatness and cleanliness, and her children are the same. She had excessive trouble with her two boys, who were headstrong and wild; but they have both obtained good masters and have long been in regular work.

The garden of this cottage is always full of cabbages; there never seems to be emptiness in it; and the widow appears to till it with her own hands. There are always some sweet, but simple flowers growing under the windows;

and if the eye glances through the small panes of glass, the neat widow is seen busily employed with her needle, and her two little girls, when not at school, working by her side.

Sometime ago, a thunderstorm slowly, but heavily approached. In our immediate neighbourhood storms are generally slight; they come up from the distance like lions, but as they draw near, they most frequently diverge to the right and left, following the course of the high ground on either hand, and passing mildly and mercifully over us. But on this morning the village was the scene of a loud warning from on High. The widow was standing at her little window, observing the advance of the storm, when suddenly the old ash-pollard appeared in terrible array, flames, and smoke, and dust, eddied around it, and a crash ensued of awful thunder. Splinters flew on every side, some fell close to the cottage-door; and when the startling vision passed away, part of the old cartshed lay resting on the ground, and the tree was rent as with a hatchet from top to bottom. So striking an instance of God's providential care had been rarely noticed in the village; and it was doubly affecting and remarkable, because two men were trying to shelter themselves beneath that very shed, which sunk as they stood within it. One man was shaken violently by the shock, and a total deafness, which had afflicted him for years, was entirely removed for the space of half-an-hour, enabling him, he said, to hear as well as ever he did in his life, for that short period only. The other was a man of notoriously bad habits, to whom death was peculiarly terrible, and whose narrow escape caused him to quake for fear.

The riven tree still stands a monument of God's patient forbearing mercy to sinful man. At a distance it appears

unchanged; but on approaching it, the foliage hangs down dark and dead; portions of the bark are stripped from the trunk, and a blackened rent marks the passage of the electric fluid to the earth.

How striking and instructive are such events as these! We hear and read of them perpetually; a storm seldom bursts without some solemn cry to the children of men; the thunders utter their voices, and the arrows of the Lord go abroad, but how seldom are they listened to; how faintly does their sound strike the dull ears and hearts of the thoughtless children of men! Why was not the cottage roof dashed to the earth, instead of the useless shed? Why were not the beings sheltered by the few crazy timbers, and the trunk of the tree, smitten also, by the lightning bolt? Was it *accident—luck—good fortune*, that spared them till another time? No! it was none of these. The Bible, the guide-book of the Christian, makes no mention of them. The Lord has vouchsafed to tell us how these things are; let us hear His Word, which “cannot be broken,” and lay our hands upon our mouths: “I kill, and I make alive; I wound, and I heal: neither is there any that can deliver out of my hand.”

Those who do not see the hand of God wielding and directing the destroying flash, may suppose that the elevated position of the stricken tree caused it to attract the lightning, and, thereby, preserve the cottage that stood so near it. Man is ever ready to give a reason agreeable to his own dark understanding, for that which can only be spiritually discerned.

The very same storm which struck the tall, prominent tree, withered one in the midst of a thick copse, in no way distinguished in height or size from all the others around it. There it also stands, a dead and blackened ruin, to “confound the wise,” and teach us that although the Lord deigns to work by means, and to carry on His Almighty designs with accurate and exquisite precision, yet no storm can gather, no cloud can burst, no bolt can strike, no sparrow can fall, without our Father's hand. It is not ‘this,’ or ‘that;’ it is the will and command of God. “The voice of the Lord is powerful,” and “full of majesty.” “The voice of the Lord breaketh the cedars”—“divideth the flames of fire”—“shaketh the wilderness.” He “maketh diviners mad—turneth wise men backward, and maketh their knowledge foolish.” The cottage-gardener may, if he will, be a wiser man than he who sits at the table of kings. The “fear of the Lord” is wisdom, and the “knowledge of God” is understanding.

The cottage and the blasted tree, standing side by side, read us a loud, momentous lesson. Let us “mark, learn, and inwardly digest it.”

TO CORRESPONDENTS.

*** We request that no one will write to the departmental writers of *THE COTTAGE GARDENER*. It gives them unjustifiable trouble and expense. All communications should be addressed “*To the Editor of The Cottage Gardener, 2, Amen Corner, Paternoster Row, London.*”

TO IMPROVE A STAGNANT POND (*T. M. W.*).—No grass seed would vegetate in your pond. The best thing you can do will be to procure a quantity of coarse-growing water plants, such as the different sorts of *Carex*, *Typhas*, *Butomus*, *Water Lilies*, &c. Any ditch or shallow pond would furnish numbers of suitable plants; these would grow rapidly, entirely cover the water, and in time would, with their leaves shedding annually and their roots, fill up your pond without any expense.

CLASSIFICATION OF PELARGONIUMS (*Ignoramus*).—How to know which section of the genus any geranium belongs to is not easily learned from books, but there is not the least “novelty” or difficulty for a practised eye to distinguish more than twenty sections or divisions of them, and some of the sections are again divided into smaller groups, as, for instance, *Horse-shoe* and *Nosegay* belong to the *Scarlet* section; *Oak-leaves*, again, are very numerous, as *Fair Helen*, *Rose-scented*, *Moor's Victory*, and a dozen more; *Ivy-leaves* are easily known, so are the *Diadematum*s, the *Yeatmaneanum*s, the *Jehus*, the *Ignescens*, and all the rest of them. We never attempted to divide them, more than as groups for particular purposes. Hybrid perpetuals we have used to distinguish such as flower all through the season without intermission whether “fancies” or not. “Ugly Stag's-horns,” by which you mean their seed beaks, take only two forms—the bent footstalk of the flowers and the unbent. But are you not wrong in placing *Daveyanum* among the “Stag's-horns”? We are not aware that the true *Daveyanum* ever seeded at all; we bought it for two guineas in 1824, and began to cross it in 1830, but from that day to this all our ingenuity failed to produce one single seed from it, but its pollen is good enough. We cannot say how many species are in our greenhouses, but more than 200 have been described as wild original ones. We do not know white *Purity* as a bedding-out Carnation.

UNIQUE GERANIUM (*S. R.*).—Your best plan will be to grow your two plants of *Unique* as well as you can this season; stop them now, and again in the middle of September, to cause them to make bottom shoots; pinch off their flower-buds to strengthen them, and begin to propagate them at the end of next February, and all through March and April, when they will root as freely as any other geranium, and every two joints will make a cutting, and all will bloom next season in a bed out of doors; but very young plants of them do not bloom nearly so free as old plants. We do not know the bulb you sent; we can tell better when it has bloomed.

PELARGONIUM LEAF (*Carrig Cathol*).—The leaf, we think, is that of *Pelargonium ardens*, an old original species with tuberous roots. To give a list of the principal greenhouse and hardy plants that will grow from cuttings would be a dictionary of itself—expert propagators can increase all of them from cuttings, either of the roots or branches; but we shall consider your request, and see what more we can effect. We insert the following extract from your letter, not only because praise is grateful, but to encourage others to follow the same practice under similar circumstances:—“I am thankful for your advice, which saved the roots of my *Ivy*, torn from the front of my house about eighteen months since, and which I was about to have removed, to replace with young plants. Your directions (vol. iii., page 283) were strictly followed, and the wall is now thickly and beautifully covered to a height of twelve to fourteen feet.”

CUTHILL'S STRAWBERRY CULTURE.—In answer to a correspondent, Mr. Cuthill, Nurseryman, Camberwell, writes to us as follows:—“I am obliged, on account of the ground being very light, to manage in various ways with *Keen's Seedling*, *British Queens*, and others. The plans are all fully detailed in my pamphlet, which is advertised; but the ordinary way of managing the *Black Prince* will do—plenty of manure and trenching deep (as your correspondent has done); all he has now to do is to get runners from plants which have borne a good crop. Never plant runners which have not borne, for nothing deteriorates faster than the strawberry, in light land especially. The *Black Prince* came into bearing on the 14th of June; and the first week I sold them at 5s., 4s., and 3s. per pound out of doors. The ground was trenched deep with plenty of manure (stable), the one-year-old plants had about 50 fruit, the older ones from 100 to 250. Several persons have succeeded well by forcing the *Black Prince*.”

HARDY CREEPER (*Osmond's Ash*).—One of the prettiest creepers we know, to cover the south front of a house within the reach of the sea breeze or spray, is the *Cotoneaster microphylla*, which should be trained and pruned like a pear-tree, fan or horizontal fashion. Very light soil suits it best, if two feet deep, and rich. The best *Ivy* for a house is the *Broad-leaved*, or *Irish Ivy*. While these were getting up we would use the evergreen climbing roses to cover the upper parts of the house.

PRUNING DAHLIAS.—*Rusticus* says:—“I always endeavour to train my Dahlias as nearly as possible in the form of an inverted cone; to this end early attention is requisite, and every shoot that has a tendency to grow inwards is removed as soon as it appears—in short, the plants are disbudded, as you direct in the case of peach-trees, &c. By this process the vigour of the tree is concentrated in those branches which are intended to remain, and the bloom is consequently finer. The leaves, also, which crowd the centre of the plant are removed, although I always feel regret when compelled to displace a leaf, particularly a dahlia leaf, which is nearly equivalent to the branch of another tree of similar calibre. If, however, dahlias were to be grown in those countries where the heat is excessive, and where no rain falls for many months—for instance, in their native arid plains of Mexico—I would not, in that case, disturb a single leaf, as I believe that the vigorous organization of their leaves is intended to receive the necessary supplies of nourishment from the atmosphere, for the support of the plants whilst the roots remain in a torpid condition. And here we may admire ‘the manifold wisdom of the Creator,’ that whilst He has ordained that cold should be the season of rest to plants in northern regions, He has constituted the hot season to be their period of repose in more sunny lands. But in our country, where moisture is often excessive, and sunlight somewhat of a scarce commodity, and where plants are generally more dependant on their roots for their well-being than from the supplies which they derive from the atmosphere, I apprehend that it is better to remove any redundant leaves that interfere with the free admission of air and sunlight to the plants.” Mr. Barnes, of Stowmarket, is the best pruner of dahlias of all the great growers we know; he blooms the very tallest of them most profusely at a yard high, and he says that none of them need be grown any higher than that. We shall ask him for his mode of pruning. Your own mode seems very good, and your physiological reasoning is equally so; but Mr. Beaton thinks the dahlia is not a proper subject to prove it to be so.

FUCHSIA CORALINA.—*A Devonian* says:—“Two plants of *Fuchsia coralina* trained against a south wall in my flower-garden, and covering a space of eighty square feet, are the objects of so much admiration to myself and friends, that I am anxious to know if there are any light-coloured varieties, that, so treated, are likely to obtain a similar height. My garden is situated in a warm part of South Devon, and the wall on which the Fuchsias are growing is broken by buttresses, into recesses, each eight feet wide, and covered with a thick coping of slate, so that the plants are in some degree protected from wind and frost. It appears, however, doubtful if the light varieties will attain a corresponding height; but if any reader of this query will give his or her experience on the subject, I shall be obliged. I wish to plant light varieties with the purest white sepals, and scarlet or purple petals. It appears that no ordinary wall would be too high for *Fuchsia coralina*, if growing in rich soil, as it is a cross from *F. radicans*, a climbing species of robust habit, while the light ones, I believe, are from *F. fulgens*.” We shall be obliged by any of our readers informing us of their experience with light-coloured Fuchsias trained against a wall. We should try *Nonpareil*, which is robust, and bears its flowers in showy trusses. Is it really true that *Coralina* is a hybrid from *Radicans*? If it is, here is an opening to a White *Coralina*. Can *A Devonian* oblige us with the biography of *Coralina*?

BARLEY BREAD.—A correspondent (*Ignoramus*) wishes for a good recipe to make this. Will some of our northern readers oblige us by sending one.

FERNS FOR WARDIAN CASE (*Legeotium*).—Any of the following will do for the centre of your Wardian Case, two feet high :—*Adiantum formosum* (Handsome Maiden-hair), *Lygodium scandens* (Climbing Snakes-tongue), *Nephrodium molle* (Soft N.), and *Pteris Chinensis* (Chinese Brake).

SETTING MELON BLOOM (*E. B.*).—The female blossoms are ready for the application of the pollen as soon as they are completely open.

CANDLE PLANT (*Ibid.*).—We know of no plant called exactly thus. The Candleberry Myrtle is the genus *Myrica*, and *Candel* was the old name of the Mangrove, *Rhizophora*.

PARALYSED DUCKS (*F. B.*).—Your young ducks that have lost the use of their feet, had better be allowed to swim in a tub of hot water daily, and be kept warm. If they are costive, give them each a small teaspoonful of gin.

INDEX (*K. O. T.*).—We duly received your two notes recommending us to prepare a general index for our six volumes at the end of the present one. If our readers generally are willing to pay for an extra double number, we have no objection to have one prepared, but they must write to us and express such a wish.

EPILOBIUM ANGUSTIFOLIUM—*J. R. P.*, after wishing that "Queen Mab's shadow may never be less" for communicating this botanical name of "The Ranting Widow," asks for its history and culture. Its general English name is the Narrow-leaved or Rose-bay Willow-herb, and it is found wild in most parts of Europe from Lapland to Italy. It is a native of many places in England and Scotland, and there is of it a white-flowered variety. Our earliest herbalists mention it, and Gerard says he had it from Yorkshire, "being a plant very goodly to behold for the decking up of houses and gardens." Professor Martyn says the young shoots are eatable, though an infusion of the plant stupefies; the pith, dried and boiled, becomes sweet, and it is made into a drink and vinegar by the Kamschatdales: cows and sheep will eat it, but goats are said to be very fond of it; the down of the seeds mixed with cotton has been made into stockings. It is a hardy herbaceous plant, and may be propagated by seed sown as soon as ripe in the autumn, or by division of the plants.

DRYING FLOWERS (*A New Subscriber*).—Very few flowers retain their colours perfectly when dried. The following, published by Mr. Coleman in the *Pharmaceutical Journal*, is said to preserve the colour most successfully. Quickness in the drying is well known to be the best means of preserving the tints of the petals :—"The apparatus required is very simple, consisting of a few canvass or linen bags, of such size that, when laid flat, they will rather more than cover a sheet of demy paper; a quantity of clean sand; an old saucepan, or other convenient vessel, to heat it in; and a few quires of blotting paper. Having provided these, first put a sufficient quantity of sand in the saucepan, over the fire, and, while this is heating, take a quire of blotting paper, on which arrange the plants, covering them with two or three sheets of blotting paper. When the sand is sufficiently heated, and uniformly so (which may be promoted by stirring it with a stick), pour into one of the bags enough to fill it to one-third. The mouth of the bag being closed, by tying or folding back, it is then to be laid carefully over the plants arranged between the paper, and the sand contained in it to be spread out by the hand, and pressed with a board, so as to form a flat uniform surface. This process may be repeated, several layers of paper, plants, and sand-bags being laid on one another. If this is done, no extra weight will be required—the smallest and most delicate plants being placed in the uppermost layers; but if the subject be large and thick, a board and weight will be generally necessary. Unless they are very thick and succulent, in which case they may require a second application of hot sand, the plants will generally be found quite dry within twenty-four hours, and often much sooner. This is one advantage; as, by this rapid desiccation, the colour is preserved in the greatest perfection, i.e., if the temperature be well regulated. The second, and, perhaps, of more importance as regards the botanical value of the specimen, is, that the sand, by adapting itself to the inequalities of the object under pressure, prevents any crushing of the stems, receptacles, &c.; while the parts of the leaves in juxtaposition with a hard, thick stem, which, by the ordinary method, escape any pressure, and consequently shrivel up, are all equally flattened."

CHARCOAL-DUST (*A Recent Subscriber*).—You can obtain this of any large dealer in charcoal; and the nearest to you can be found by consulting the Post-Office Directory.

BACK NUMBERS (*Ibid.*).—All our early numbers have been reprinted, and may now be had either in single numbers or in volumes.

FUMIGATING WITH CAYENNE PEPPER (*W.*).—Grapes now colouring would not be injured by fumigating either with tobacco or cayenne pepper. We have nothing new relative to the latter mode.

CHICORY CULTURE (*T. Hill*).—As you have *The Cottage Gardeners' Dictionary*, we need only refer you to page 234 of that work; and other for information relative to cultivating it for its root, to *THE COTTAGE GARDENER*, ii. 50 and 191, which you say you also have. We should sow in April, cut down the flower-stems as fast as they appear, and take up the roots in October for drying and slicing. In your deep soil in Derbyshire, *Liquorice* would do very well. See for its culture under the title *Glycyrrhiza*, in the Dictionary. You may sometimes obtain from the chemists fresh juicy roots, cuttings of which would grow. When dry they are useless. Our correspondent says that vinegar made by the *Vinegar plant* should be boiled immediately it has turned sour.

RETARDING GOOSEBERRIES (*Rev. H. B. Hall*).—You ask for the numbers in which this subject is mentioned, and you will find it in Nos. 45 and 93. The best early and late Strawberries are *Keen's Seedling* and *Elton*. Put *Pansies* for criticism into a thin box, with corks so placed that the post-office punch will not crush it in; put a little damp moss below the flowers and a little of the same moss over them.

RAISING MUSHROOM SPAWN (*M. D.*).—In answer to your query, we extract the following from *The Cottage Gardeners' Dictionary*:—"Two barrow-loads of cow-dung, not grass-fed, one load of sheep's-dung, and one of horses', well-dried and broken so small as to pass through a coarse sieve, are well mixed, and laid in a conical heap during March, in a dry

shed, being well trod, as it is formed, to check its heating excessively. This heap is covered with hot dung, four inches thick, or only with mats if the shed is warm; for here, as in all the stages of growth, the heat should only range between 55° and 60°. In about a month the heap is examined; and if the spawn has not begun to run, which is shown by indistinct white fibres pervading its texture, another covering of equal thickness to the first is applied over the old one; in another month it will indubitably make its appearance. The time varies from three to ten weeks. If a small quantity of spawn only can be collected, it may be increased in the following method:—Small pieces of the spawn may be planted a foot asunder, just beneath the surface of the mould of a cucumber-bed constructed in the spring. In about two months the surface of the spawn will assume a mouldy appearance; it may then be taken up, with the earth adhering to it, and when dried stored as before directed. As to melting Honeycomb into Wax, look at p. 132 of our No. 62.

GUERNSEY COW (*K. O. T.*).—Do not attempt to fat her; they are of the worst possible breed for fattening. Sell her at the next fair for whatever she will fetch.

QUICK HEDGES (*T. M. W.*).—Our correspondent says:—"It is usual here (Bishop's Waltham), for the sake of ornament (!), in cutting the Hawthorn hedges, to leave one plant uncut at about every ten or fifteen yards, which has a pretty appearance, when all the other parts of the hedge are closely and evenly clipped, especially as these uncut bushes are usually covered with a profusion of blossoms, succeeded by a plentiful show of fruit. But the object of my noticing this is to say that I observe, whilst the other plants which are clipped remain only the size of small walking-sticks, those that are left uncut are the size of a man's wrist, and frequently much larger. Does not this show that it is the best policy to allow the young hawthorn hedge to grow *without any top pruning* till the plants are several years old, and then cut them down to about three feet? Will they not then shoot well, and make a much stronger fence than if they are twice a-year constantly clipped? I have a young quickset hedge by the side of my garden, and I shall not give it the usual pruning till I have your opinion." Our opinion is that you must cut back all the side branches of your young hawthorns, but only just stop the leading shoots. This is the way to get height and thickness at the same time speedily. If you let them grow up unpruned they will increase in thickness of stem like those you mention, but they will get bare at the bottom. Cut the upper side shoots in close, and increase a joint or two more in length on each shoot as you get nearer the ground, leaving the lowest the longest, so as to have the outline of the young hedge like an inverted A.

RED SPIDER (*An Incumbent*).—With the bloom upon your grapes by no means syringe at all; it is the worst possible practice. Keep the air of your house moist by frequently watering the paths, and give a *strong* application of flowers of sulphur on the flue at the part furthest from the fire, and thus very gently repeat the fumigation, again and again, at intervals of a day or two, if the red-spider has not disappeared; if the flue where the sulphur is applied is not hotter than 212°, it will do no harm. You have been too timid in fumigating.

GRAPE (*Questor*).—It is quite impossible, from the inspection of a few green berries, to be certain of the name, but as the berries are very oval, and you say the grape is black, and very like the *Hamburgh* when ripe, it is most probably the *Black Prince*.

DAHLIA (*T. J. L. M.*).—If correctly pronounced, it would be as if spelt *Darlta*, but as by general acceptance it is pronounced *Daylia*, no one chooses to appear pedantic by uttering it with any other intonation. Your young *Myrtle*, the shoots of which die as soon as three inches long, is in an unsuitable soil probably; but we cannot tell without knowing what the soil is, or where the plant is growing. *The Cottage Gardeners' Dictionary*, as nearly as we can tell, will be completed in fifty-three numbers, of which forty have been published.

PROFIT FROM ONE-EIGHTH OF AN ACRE (*An Anxious Enquirer*).—We sympathize with you sincerely, but not all the ingenuity of the best gardener could clear £35 a year off that space. Nevertheless, "Health is a merry fellow," and worth making some sacrifice for. Have nothing to do with a cow, nor with rabbits; but do what you can with pigs, poultry, and bees. These well managed, and the vegetables from your garden, might clear you half the desired sum.

NAMES OF PLANTS (*T. N. W.*).—Yours is a species of *Æschynanthus*, and probably *Æ. radicans*. Treat it as a stove plant. We never heard of such a plant as *Pulea*. (*Brentingly Cottage*).—Yours is *Silene armaria*. In most cases *old tan* will do for protecting plants as well as coal ashes. It is impossible to answer your question about the hen-yard. Why not have one wing of each fowl clipped? or why not cover the yard entirely with iron net? (*John Leonard*).—The flower was quite crushed of your *Gladiolus*. (*Hester S.*).—No. 1. *Agrostemma coronaria*, Rose Campion. 2. *Clematis erecta*, Upright Virgin's Bower. 3. *Spiræa filipendula*, Double Dropwort. The fungus is the Stinking Morel, *Phallus impudicus*.

WISTARIAS (*J. N., Omagh*).—You may plant *W. sinensis* (which was once called *consequana*) and *W. frutescens* against your east wall. They will remain longer in bloom, if the soil and situation be favourable, than when grown against a south wall. The common *Orange*, from Italy, is best for a cool greenhouse. List of Roses next week.

COW SORE TREATED (*D. L.*).—Foment her teats, before milking, with warm water, and after milking anoint them with the following salve:—Melt together 1 oz. of bees' wax and 3 oz. of lard; and when this begins to get firm in cooling, rub into it $\frac{1}{2}$ oz. sugar of lead, and a drachm of aloes, both finely powdered. *Thistles* can only be eradicated by continually cutting them down. *Colesat* or *Rape* is the best thing you can sow for the use of cattle upon ground cleared of crops during the present month.

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Eclogæ ex Horatii Poematibus (In the Press).	

GERMAN.

Edited by Dr. Aue, German Master in the High School, Edinburgh.

First German Reading Book	2 0
Second Reading Book	3 0

FRENCH.

Edited by Professor de Gue.

Elementary Grammar (In the Press).

*** OTHER WORKS IN PREPARATION.

Published by W. and R. CHAMBERS, 339, High-street, Edinburgh; W. S. ORR and Co., Amen-corner, London; D. N. CHAMBERS, 55, West Nile-street, Glasgow; J. M'GLASHAN, 50, Upper Sackville-street, Dublin; and sold by all Booksellers.

M D	W D	AUGUST 14—20, 1851.	WEATHER NEAR LONDON IN 1850.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bef. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in In.						
14	Th	Meadow Rue flowers.	[1786, 30.014—29.994	72—55	N.E.	—	45 a. 4	24 a. 7	8 50	17	4 30	226
15	F	ASSUMPTION B.V.M. DS. KENT B.	30.011—29.961	70—52	N.	0.01	46	22	9 8	18	4 19	227
16	S		29.972—29.944	78—53	N.E.	—	48	20	9 27	19	4 8	228
17	SUN	9 SUNDAY AFTER TRINITY.	30.003—29.966	76—49	W.	—	49	18	9 46	20	3 55	229
18	M	Flies abound in windows.	29.996—29.767	76—49	S.W.	—	51	16	10 7	21	3 43	230
19	Tu	Common Tansey flowers.	29.795—29.753	68—45	W.	—	53	14	10 31	22	3 30	231
20	W	Redbreast sings again.	29.718—29.706	68—43	S.W.	0.01	54	12	11 1	23	3 16	232

HONEST old Anthony Wood, in his "Autobiography," under the date of March 17th, 1657, has this entry:—"JOHN TAVERNER, son and heir of John Taverner, of Soundness, near Nettlebed, in Oxfordshire, Esq., died at Greys Inn, and was buried in St. Andrew's Church, in Holborn, near London. His sister Mary, the wife of John Harris of Silksted, near to Winchester, was his heir."

This brief record led us forth, one bright morning in August, to as pleasant a pilgrimage as ever occupied one who loves to wander in green lanes, and inquire of wondering rustics where houses are to be found, in which dwelt, "in the olden time," men then of small note, but now of some renown. Men who strove to benefit their kind, were listened to with small patience, laughed at behind their backs as "fellows with crotchets," but acknowledged by posterity—that detective of long-neglected truths—as "fellows who were in advance of their age." On the said morning in August, we set forth from the Southgate of Winchester, accompanied by two sapling pilgrims more intent on butterflies than black-letter, wound our way through narrow paths that intersected broad fields of corn, waving so sea-like before the wind, and soon mounted to the highest point of Compton Downs—those Downs of which our friend versified so well, at page 270 of our last volume. Passing over this one of the head-quarters of our South-down sheep, we were soon embowered in the Silksted green lanes, or as they there pronounce it Silsted—a contraction unusually unembarassing, for we would warn our brother pilgrims who may be less accustomed to the staff than ourselves, that they must not at once conclude that they are not near the vicinage of their journey's object, because no peasant ever heard of the place as they may pronounce it. When journeying to the Chapel of our Lady of Walsingham, we vainly asked for the road to Eye, and were equally unsuccessful in inquiring for Bottesdale, until rustics, more acute than their companions, guessed that we meant Aye and Busdell! Well, on we paced through the Silksted lanes, until we stood before the substantial old red-bricked house in which had resided, some two-and-a-half centuries before, the sister of John Taverner. However, we regarded but little the house, for it has been renovated and modernized; but we sought for the relics of the orchard, to see if there remained any of those trees of which he said—"In my opinion there be no fruit to be compared to the Pippin, if it were not so subject unto the canker as it is;" and we were not a little interested, to find, though hollow, broken down, and in the last stage of

decrepitude, a solitary apple-tree, which let us believe Taverner grafted, as it is certain he may have partaken of its fruit, for probably it is nearly three centuries old. Planting and grafting were his especial delight and recreation, when vacations permitted his escape from the less attractive claims of his legal studies. The results of these "vacation pastimes" appeared in the year 1600, in the form of a volume bearing this title:—"Certain experiments concerning Fish and Fruit. Practiced by John Taverner, Gentleman, and by him published for the benefit of others. Such is the language, not of presumption, but of conscious merit. The work is dedicated to Sir Edmund Anderson, Lord Chief Justice of the Common Pleas, and the dedication commences by stating that the author happened "lately to light upon a book dedicated unto his lordship by one Mr. George Churchy, intitled—'A new book of Good Husbandry,' and treating of fish-ponds and ordering of the same, which book, as it should seem, was first written in Latin by one James Dubravius, but translated into English by the industry of the said Master Churchy." That translation we have never yet met with, but it probably taught those lessons of the ancients, which Taverner thus condemns:—"Some writers teach that apples may be grafted upon the Willow, the Elm, the Ash, Alder, and such others, but a man had better be without such fruit-trees in his orchard, than to have them, for that they will have a taste of the stock that they are grafted on. An apple is not good to be grafted but upon the stock of the wild apple or crab, as likewise the pear and warden upon the wild pear-stock." Taverner's is a practical book, and among other good recommendations, he says:—"I have found for apples, pears, and most kinds of plums, to graft in the cleft sawn four inches from the ground, to be the best." He deserves, however, most especial notice as being the first writer to recommend strenuously the adoption of budding. Mascall merely mentions it under the name of "grafting in the leaf," but Taverner insists upon its adoption, adding that "the Abricock Plum, the Vine, and such other as have great store of pith, are fittest to be grafted in the leaf, or eye, as they call it."

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-four years, the average highest and lowest temperatures of these days are 73° and 51.6° respectively. The greatest heat, 88°, occurred on the 20th in 1826, and the lowest cold, 37°, on the 20th in 1839. During the period 95 days were fine, and on 73 rain fell.

TO-DAY we resume our undertaking of describing and criticising the horticultural implements and tools exhibiting in the Crystal Pavilion. The descriptions and comments, for the most part, will be from the pen of a thoroughly practical gardener, after personal inspection; and we think our readers may rely upon the soundness, as we are sure they may upon the honesty, of the judgments.

25 A.—ALSOP'S SULPHURATOR AND FUMIGATOR.

This is a double implement for diffusing sulphur, also for fumigating houses with tobacco. It consists of a barrel with fan blower, and a tube from the front side of the barrel, with a hopper for the sulphur, which is carried by a grooved axle into the tube below, and blown out by the fan. This axle is worked by a wooden wheel, near the circumference of which is a small handle, for the operator to hold when working the axle and the fan by the aid of another small wooden wheel fixed on the axle of the fan blower. The implement is made of zinc, with the exception of the box for the tobacco, which is of copper, and fixed on the side of the barrel containing the fan blower, with small holes pierced in the lower side of the box. The tobacco is put in the box, and lighted on the top.

There are many sulphurators and fumigators on the same principle; but we have not seen one before com-

bining both implements, which certainly increases its relative value. For small houses, or frames, the fumigator is a very excellent invention, as a cool stream of smoke can be thrown into them, which, with the most ordinary management, will not injure the most tender plants, an effect liable to be caused by the pot and bellows. In using the sulphurator, care is required to have the sulphur quite dry; for if not perfectly so, the grooves in the axle are liable to get clogged, which, consequently, prevents the sulphur from falling into the tube. Sulphur vivum, or black sulphur, is the best for using with this implement.

51.—SEWARD'S CONIFERÆ SUPPORTER.

This is simply an old-fashioned iron tree supporter, with three points to be driven into the ground for fixing the pole firmly in its place, the upright is about seven feet high, to which three rings are screwed, and through these rings a pole is placed, by means of which another length may be placed at the top of the first pole as the tree advances in height. Iron supports for trees are much preferable to wooden stakes, as they are not blown down by winds, an accident to which wooden stakes are liable, much to the detriment of many a valuable plant.

56 A.—EBBS' LADY'S GARDEN RAKE

Consists of a hoe, spud, and rake, all united. The

principal feature in the above is its compactness, its utility in allowing a lady to dispense with a multiplicity of implements, and being able to extract weeds from between closely-planted flowers, and preventing the necessity of treading on the beds, or stooping to pull up weeds with the hand. It is a small rake, on one end of which is a spud turned outwards; the other end is turned inwards, and forms a draw-hoe. It is a neat little implement for ladies who are fond of using such-like things among their flowers, and will be found very useful by them.

89.—READ'S NEW WATERING GARDEN ENGINE.

This engine will hold about twenty-eight gallons of water, and will discharge the water to the distance of fifty feet. It is made of zinc, set on two wheels, the action being the same as any common engine, with the addition of an air vessel surrounding the pump—this being the most important feature in the engine—by which means a constant stream is kept up, nearly equal in effect to a double-acted engine. The tube above the body of the engine is made of vulcanised Indian-rubber, with a brass end. The engine is worked by a handle fixed to the front end of the engine. As garden engines cannot be dispensed with where there is any extent of wall-trees, this is very desirable, combining cheapness with utility, and not being liable to get out of repair.

THE notice of the great Tulip Show at Derby, written by our reporter, E. Y., and published by us at page 158 of the present volume, has made some stir among the Northern Tulip growers. Our reporter did not criticise the particular judgment he condemned, but rested upon the broad principle, that the Southern do not, and will not, pass a foul flower, whilst the Northerns, as at Derby, do, and will. It is quite true that the Northerns had a Southern judge willing to act with three Northerns, and who, instead of carrying out the Southern taste in full, and, failing in that, retiring altogether, remained acting with them, and thereby fell in with their taste, or want of taste, or at least sanctioned it by his presence, but we care not under what regulations the flowers were to be judged, because there is only one point to which our reporter's censure applies; and it was either just or unjust accordingly as the answer may be to one question: "Was a foul flower allowed to win in a stand or in class?" If a foul flower alone, or with others in a stand, took a prize, all the abuse and all the sophistry that can be written or talked falls to the ground. We have often regretted that florists are the most irritable of all men; a Chancellor of the Exchequer may be censured by every trumpery scribbler in the country—a whole government may be condemned by the *posse comitatus* of politicians—and they receive the castigation with becoming patience; but a florist cannot be blamed or admonished without showing a waspish disposition to sting.

One of our contemporaries has shown this disposition, and has descended to personalities, which our reporter will not retort, nor for which will we waste space by

allowing him to reply. Indeed, the subject admits of no further dispute, for Mr. Turner, of Slough, and Mr. Edwards, of Holloway, both say that, at Derby they were "beaten by dirty flowers." Mr. Robert Lawrence, of Hampton, says the same; and, in addition, we have received the following from Mr. Slater, florist, of Cheetam Hill, near Manchester. He says, after blaming our reporter for being too indiscriminate in his condemnation,

"E. Y. cannot have read the 4th condition of the Derby Show, which states 'that no flower with black stamens, or impure at the base, shall win;' and again, in the 6th condition, 'the judges will be recommended to place each variety *once only* in the classes; but in the event of there being an insufficiency of variety complying with the 4th condition, then they may place a duplicate.'

"Upon looking over the list of flowers which obtained prizes, there are only *Sir Thomas* (Beighton's), flamed Bizarre; *Lady Crewe*, alias *Lady Middleton*; *Vesta*; and *Lancashire Hero*, which is sometimes very pure, that have either impure stamens or bad base. Now the judges cannot have been acquainted either with the regulations or the flowers, as they allowed these flowers to take a prize; and in order to show this more plainly, one of the judges, the editor himself, at page 234 of the work which condemns E. Y., says that Beighton's *Sir Thomas* is a very attractive flamed Bizarre, *but unfortunately stained*. Where is the judgment here to make such an assertion, when he well knows *some flowers*, and fine ones too, which had a slight tinge upon the stamens, were discarded, as was, I believe, two *Lancashire Heroes*, labelled *Louis XVI.* in mistake. Now I must say that the *Lancashire Heroes*, so called, were *Louis XVI.*, true and fine. They were from a root I introduced ten years ago, and allowed to be the finest strain of *Louis XVI.* in the kingdom. It always comes fine, and the editor's friend, Mr. Dixon, of Manchester, can so far correct the judges in this matter, as he purchased the root from whence these blooms have been produced, having sold the offsets to the exhibitor of these flowers.

"Then the editor again, at page 233, says, there was *Vesta* clean, or nearly so. Here, then, is ample scope for E. Y. He could have truthfully asserted that the regulations were not adhered to, although all ought strictly to be kept. Were there no duplicates in flamed Bizarres? Was there not another *Captain White* to be found, provided there were not more than twelve varieties staged, or a *Polyphemus*, &c.? Again, why was *Lady Crewe*, alias *Lady Middleton*, allowed to win, which has not a pure white base? These are questions that cannot be satisfactorily answered, because there was a strong bias in favour of it as it was raised at Derby. The fourth pan ought to have been disqualified on account of *Lady Middleton* (or rather *Lady Crewe*).

"It is generally expected that those who write on horticultural subjects ought to be able to discriminate the aliases. Now it is well known that *Ulysses* is only *Polyphemus*, and the grower who buys it for anything else will be disappointed. *Queen Charlotte* is what is well known in the south as *Surperb en Noir*. This variety was first named *Queen Charlotte* by a Bolton florist, who bought it as *Superb en Noir*, and sold it to the neighbouring florists under the new name, and it is now called *Bolton Queen Charlotte*, in contradistinction to one sold under the same name at Stockport. *La bien Aime* is only *Alexander Magnus*. *Maid of Orleans* only *Princess Royal*, feathered. *Princess Sophia* only *Madam Vestris*. Now these are worthy of being noticed to guard the young amateur; but with some, these things are not liked. I remember an instance of *Garrick* being catalogued and sold as *Shakspeare*, *Edmund Kean*, and *Leonidas*, and with a difference of price of only seven guineas, yet all one variety! If horticultural editors would do their duty, floriculture would not lack supporters, because good things would be prominently brought before the public, no matter by whom raised, whether by a friend or foe, and the bad ones discarded.

"For my own part I feel much pleasure in affording information, and I trust it is done without reference to parties, and with a Christian spirit, as well as with a hearty desire to promote floricultural pursuits."

GARDENING GOSSIP.

THE *Grand Annual Carnation and Picotee Show*, which made so much noise last year, and, if we are to credit the accounts, drew together a very large assemblage, was announced to take place at Slough, in 1851, with as much pomp as the meeting of the Royal English Agricultural Society, and we looked forward for the summons through the ordinary channels of information, but neither saw nor heard anything about it. A visit to Slough, on our way to Oxford, gave us a sight of Mr. Turner's collection of no less than sixteen hundred pots of Picotees and Carnations, and let us into the fact that the Grand All-England Show had gone by! there being only three nurserymen to represent that class for the whole kingdom,—very few amateurs attended, and still fewer dined!

The natural question is, How could this have happened? and the answer is, because not one florist, amateur or otherwise, knew it was coming off. How were the twenty or thirty thousand readers of *THE COTTAGE GARDENER* to know it? Is advertising so expensive? Last year there was as much parade about the gathering as if floriculture depended on the muster; but this year all was managed so quietly, that although we met scores of growers and showmen at the Surrey Gardens, not one mentioned the subject; and we confess that, although every subject that interested the florist seemed to have been brought up, not one whisper of the Grand All-England affair was heard. Mr. Turner was first, and Mr. Bragg second, in show Carnations and Picotees; Mr. Bragg first, and Mr. Turner second, in yellows. We felt vexed that we were not present. We have no doubt that Mr. Turner thought we knew of it, and certainly he invited us to come and see the blooms; but as we knew nothing of the occasion we are writing about, we only went down on Wednesday. We have more than once told Societies that whatever is done quietly does little good for the science; advertising the shows and schedules does good by example, it shows the people interested in horticulture what is doing, and has the effect of rousing their energies. It is no answer to tell us that circulars are sent to the principal growers. The managers of Societies are too apt to think they know all the principal growers, when they are quite unacquainted with the number of cultivators constantly springing up. In fact, hundreds who take an interest in such things will only know now that the meeting has taken place. We tell the Societies plainly, that if they want florists to know of any thing, they must advertise in a work which reaches them all, and it is their duty to do so.

I cannot reconcile myself to the uncontradicted injustice done to that worthy man, the late *Mr. Baron*, by a contemporary.

Mr. Baron, although a shoemaker, was a man of excellent information, a first-rate cultivator of Tulips, Ranunculuses, and other costly florists' flowers; a man of considerable property acquired by his industry and perseverance. He mixed with good society, and was a frequent attendant at meetings of the leading florists and amateurs. He cultivated everything well. Hollyhocks were not his favourites. He would give twenty pounds for a new and good Tulip with pleasure, and large prices for other florists' flowers; but whatever he cultivated he improved, and Hollyhocks were one of the families he adopted; but Mr. Glenny, we know, had the greatest difficulty in persuading him that he had advanced them sufficiently to attract the notice of florists, and, therefore, to let them out. Mr. Baron took the pains which all florists have been persuaded to take; he saved seed from the best, and threw away all inferior, that the seed might be improved every year. He only valued the Hollyhock as a border flower gayer than most things in the autumn. Mr. Baron was no "humble shoemaker of Walden;" he was looked up to as a respectable, intellectual, well-informed, upright man.

Passiflora edulis bears a fruit as large as the largest hen's egg, and when it ripens turns a brown purple. We are told that *P. edulis*, *P. Laurifolia*, and *P. quadrangularis*, are eatable; for the latter, we can answer. We have had the plant trained up a rafter in the stove, and one of the fruit having fallen and cracked, the fragrance struck us as rich beyond that of any other fruit. On opening it, the inside was a mass of pulp, which surrounds the seeds, and it might be eaten as we would eat an egg with a spoon, but the flavour is delicious beyond description; one might fancy it a mixture of peach, pine-apple, melon, and strawberry. There is nothing in the slightest degree mawkish, or faint; it is cool and refreshing.

We felt vexed that we had deprived ourselves of so many fruit by cutting all the flowers; for it was only these flowers which we had overlooked that fruited. The beauty of the bloom having struck every visitor, and knowing it was but the flower of a day, we never hesitated about cutting them. The outside is a hard case, of about an eighth-of-an-inch thick, and it appears as if it would travel better than any fruit we know of. With us the plant is in a half-bushel pot of loam, dung, and peat, in equal quantities; and we found three fruit had set, though we did not know that a flower had escaped cutting, from which we infer that it fruits freely.

Mr. Fortune is about to establish the government experimental *Tea Plantation at Kumaon*. He has arrived there with twenty thousand tea plants from China, eighteen or twenty Chinamen, and all the necessary implements. The tea plant requires the same treatment in England as the ordinary *Camellia japonica*, and many people have a plant or two in their collections. Thompson's Mile-End Nursery, in its heighday, contained some good specimens in the open air, where they had stood for years, with a very slight covering in hard weather.

National Floricultural Society, July 31st, R. Marnock, Esq., in the chair. This was a very interesting meeting. There were some good flowers exhibited, especially seedling Roses.

First Class Certificates were awarded to Messrs. Paul, of Cheshunt, for *Rose, Queen Victoria*, a hybrid perpetual; a well-formed and exquisitely-coloured flower. Also to the same for *Rose, Robert Burn*, a deep crimson. This was stated to be a climbing perpetual.

Certificates were awarded to Mr. Turner for a *Picotee*, named *Victoria Regina*, a heavy rose-edged, stout-petaled variety. Also for another *Picotee*, named *Duke of Rutland*, with heavy purple edges, and other good properties. These are certain to become favourites.

Commendations were awarded to the same grower for a *Carnation*, named *General Monk*, and *Picotee, Ophelia*. These require to be seen again in better condition, before giving any opinion on their merits. The same grower, also, had a seedling *Fuchsia, Nonsuch*, of a dark colour. A certificate was awarded to it on account of its neat habit and free flowering. A commendation was awarded also to Mr. Smith, of Hornsey, for *Verbena, Eliza Cook*. It is a rosy purple, with a white eye, a good truss, and habit. Mr. Payne sent a *mule Pink* of great beauty, likely to be useful for bedding purposes. It is of dwarf habit and bright crimson colour; it had a commendation. Mr. Salter sent his *striped varieties of Pansies*, which are curious, beautiful things. *Petunias* came from Mr. Barnes, of Stowmarket; a purple-coloured one attracted much attention. The room was ornamented with miscellaneous plants by Messrs. Henderson, Pine-Apple Place. These consisted of some well-grown *Fuchsias*, raised from cuttings this spring, and a collection of *Petu-*

nias. Hollyhocks, of good qualities, came from Messrs. Chater, of Saffron Walden, and Mr. Laing, of Twickenham. On account of being shown in single blooms instead of spikes, according to the rules, the censors could not notice them. Mr. Edwards sent a named collection of Carnations.

Censors.—Messrs. Newshall, Pope of Birmingham, Neville, Lochner, Edmonds, Paul, Hoyle, and Stanton.—E. Y.

NEW PLANTS.

THEIR PORTRAITS AND BIOGRAPHIES.



THE SMOOTH LEAVED BARBADOES CHERRY (*Malpighia glabra*).—*Paxton's Flower Garden*, ii., 17.—This is a large fruit-tree, a native of the West Indian Islands, and an old inhabitant of our stoves, having been introduced in 1757. The fruit of several species of *Malpighia* are eaten in the West Indies, under the general name of Barbadoes Cherry. These cherries vary in size from that of a large pea to a small cherry, with a smooth shining skin and a sweet juicy flesh, esteemed by the natives, but insipid to Europeans. The Lotus-berry (*Byrsonima coriacea*), an allied fruit, is of much better quality. The bark of the *Malpighias* is a febrifuge; their wood is of a deep red colour, and the leaves of several species are clothed, or armed, with prurient hairs, those of *urens* stinging as bad as nettles. The order of *Malpighiads* is composed of plants inhabiting various parts of the tropics, and is nearly related to such plants as the *Maples* and *Sycamores* of colder climates.

The genus was named by Plumier, in honour of *Marcellus Malpighi*, Professor of Medicine in the Universities of Bologna, Pisa, and Messina, and afterwards (1691) chief Physician and Chamberlain to Pope Innocent XII. at Rome. Malpighi was a voluminous author; wrote on the structure and physiology of plants, and was the first who applied the microscope in examining the circulation of the blood, but he is now better known through his discoveries in the anatomy of the skin and in the structure of the tongue. The Natural Order of *Malpighiads* (*Malpighiaceæ*) was founded on this

genus by Jussieu, in his *Genera Plantarum*, in 1789, and the researches of botanists have now increased the species it includes to more than five hundred. In general their flowers are showy, and their prevailing colour is pink or yellow. The order is better known to our gardeners through *Banisterias* and *Galphimias*. In the system of Linnæus, *Malpighia* is in the third order of the tenth class, *Decandria Trigynia*.

M. glabra has flowered in the stove of the Horticultural Society at Chiswick every September since 1847, but it has never yet borne fruit. In Barbadoes it is called the "Red Cherry Tree." In its native country it is a tree of some twenty feet high, but with us it is a shrub, gay for a short time, "with its bright fringed rose-coloured blossoms, growing in little umbels from the axils of most of the leaves." Leaves willow-shaped, smooth when old, but hairy beneath when young.—B. J.

THE FRUIT-GARDEN.

VINE BORDERS—(Continued from page 289).

HAVING advanced as far as the completion of the bottom level, we must proceed to the mode of filling, and the materials employed.

It was before stated that stones or slates might be used of about two feet square; these we would place so that the edges did not quite meet; half an inch of interstice may be left between the stones in all directions, and some finely-riddled cinders, or charcoal, small as peas, and totally divested of dust, might be swept into these crevices. No doubt some persons who have taken a strong idea in favour of concrete, or other impervious and uniform bottoms, will be alarmed at this. We do not say there is an absolute necessity for it, but think it a prudent course in the majority of cases, as guaranteeing an immediate escape to the water during wet periods. There need be no fear of bottom water arising to an improper level, if the border is well elevated, as we have suggested; neither of the roots descending too much into a pernicious subsoil. Some roots may, certainly, escape; but, from long observation, we are aware that when vines suffer from such a case, it is more from wet and cold than from any pernicious matter in the subsoil. And now we must have some rubbly material to cover the stony substrature. *Must!* this is a hard word certainly—and why? Precisely for the same reasons that modern cultivators say, we must have broken, imperishable materials over the crock, or crocks, in our garden pots in plant potting. Vines generally affect such materials at a reasonable depth below the surface; why, is not particularly obvious. Such are, certainly, rapid transmitters of superfluous moisture. Soil, in *immediate contact* with such materials, can never become "sour" as when in contact with even surfaces. These, alone, are arguments sufficient to recommend their adoption.

There is no necessity for these materials to be very deep: practice differs; but we advise from six to twelve inches. Where borders are made *very deep*, as is the practice with many still, the roots cannot surely be required to enter this coarse substratum. With shallow borders the case differs; and as vines are so partial to brick rubble, plaster, &c., there can be no objection to their entering it; indeed, we should wish them to do so. Under such circumstances, then, it will be good practice so to compound this stratum, as that it shall at once be thoroughly pervious and nutritious. Coarse rubbly materials may form a layer over the bottom some six inches deep, and these again may be cased with a mixture, in equal parts, of broken bricks, old plaster, and charcoal; and if some of what is termed half-inch boiled bone be added, so much the better; a foot of such, with two feet of a proper compost above, the volume of the latter one-half above the level of the front walk, will form a most excellent border.

This open material must be protected from the finer

particles of the soil above, which, by gravitation, and in a state of solubility, would gradually insinuate themselves into the drainage, to its ultimate derangement. Nothing is better for this purpose than stout turf of any kind, cut in squares of about eight inches, or in longitudinal narrow strips, not more than six inches in width. Some very small cinders may be strewed over this surface, in order to preserve every interstice from the obstruction of soil; and now the whole is perfectly ready for the reception of the compost.

If any one should suppose that the course here recommended is too troublesome, or involves too much labour, we beg to assure him that it is no more than is applied to the ordinary process of potting, only, unfortunately, our border possesses a larger area than the bottom of a garden-pot. According to the old proverb, "the goose sauce does for the gander," and what is suitable for a plant in a pot, which requires *special* drainage, is equally suitable to a vine border; and, to follow out the proverb, good culture on a pole, is good culture for the acre. Let it not be understood that we point to this mode of proceeding as the *ne plus ultra* of vine-border making; it is simply, we contend, a safe and good plan, and perfectly consonant with principles well attested, and almost universally recognised.

Compost.—Here two distinct phases present themselves: the one, which is the best principle; the other, as an expedient. We have before observed in these pages, and we must repeat it, that a rich, mellow, turfy loam, if not too adhesive, is complete in itself for first-rate vine culture. This, however, is not within reach of everybody. Such loam procured in a dry state, with the turfy herbage adhering to it, might be brought at once to the border and filled in as chopped. It need by no means be chopped *very* fine; the more of moderate-sized lumps the better. If the turves were quartered until they averaged the size of large potatoes, the whole would be very excellent; enough of fine material would, of necessity, be produced in the act of chopping. Still, we think it would be well to blend some imperishable materials with it in the act of filling in, and we must beg to recommend a mixture for that purpose, viz., equal parts pounded charcoal, half-inch boiled bone, and old plaster; indeed, of the latter, and what is generally termed lime-rubbish, there can scarcely be too much, especially if there is the least suspicion of the loam proving too retentive of moisture. In filling the excavation with such materials, we would first tumble in a layer of the turves "higgledy-piggledy;" then a good sprinkling of the lime-rubbish mixture; next the chopped turfy material; then another sprinkling of the lime-rubbish, &c.; and so on to the surface of the border.

We have a practice here, as applied to fruit-trees in general, of strewing strawy or littery materials in or between every layer of the former. It will, doubtless, be best that such be as fresh as possible, as durability is the thing to be aimed at. Our practice is to use the fresh dung from the stable-door, or otherwise fresh leaves from the park; this is frequently strewed in very thin layers as the work proceeds. We find such a proceeding to add porosity to the volume of soil, and to provide, in its gradual decay, a slight amount of humus, which, in conjunction with the decaying turf, will much facilitate the multiplication of the fibres. There are those who recommend horse-flesh, carrion, &c., from which the mind instinctively revolts. Powerful manurial matters they doubtless are; but since splendid grapes of first-rate quality and size have been for a long series of years produced from native or virgin soils, why resort to such extravagant proceedings, involving most unpleasant reminiscences? Let us leave all such extreme cases to the mere experimentalist, whose province it really is, and who will, with time and patience, be able to point to a

mode of application more compatible with the ends of true science, and by far less offensive to the feelings.

Moreover, it is well known that means of rapidly-decomposing matter, however flattering the results of its application at first, speedily become dissatisfactory: what is gained in quality is more than counterbalanced by the sacrifice of organic texture. And if this hold true with regard to vegetable matters, how much more so with regard to animal substances? No; there is nothing like keeping a fixed eye on the *mechanical texture* of soils. This it is which must ensure an uniform amount of success, which alone can give permanent satisfaction. Materials thus provided, thus compounded, will be found to preserve their texture for several years; and, indeed, can never become "soured," as gardeners term it.

Excellent borders may, nevertheless, be made without a particle of loam. Since Mr. Hoare showed so plainly that the vine might even be grown with scarcely a particle of soil, the "*one idea*" of our gardeners of the olden time, of the absolute necessity of very expensive proceedings in border making, has become dissipated; and a little turfy loam stands first on the list when procurable; yet it is both possible, and sometimes absolutely necessary, to proceed without it.

One thing must be observed as a preliminary piece of advice concerning expedients of this kind. Ordinary soils do not, in general, possess sufficient fibrous or organic matter to render them sufficiently nutritious, or to incite to the production of fibrous roots. In proportion, then, as they are deficient in this respect, some substitute must be added. Almost any vegetable matter is an assistant in this case; but in the main it should be selected on the ground of durability, and should, consequently, possess some strength of fibre. Where commons or waste-lands are at hand, capital materials may be obtained for this purpose. The skimmings or parings of the road side, of walks or drives, are all capable of adding this necessary condition in the soil, and may be used with an unsparing hand. Even litter or strawy materials may be strewed frequently as the filling proceeds. One-half of any ordinary soil, if not too adhesive, and the other half collected from the sources alluded to, together with plenty of lime-rubbish, old plaster, and charred materials, will, if thoroughly blended in the act of filling, make a very good border indeed, and certainly an inexpensive one.

Such borders may be regarded as somewhat weaker than loamy borders, and will require occasionally a little more assistance in the way of top-dressing, liquid-manures, &c. We cannot, by any means, be reconciled to such costly affairs as the celebrated Bishop's Stortford borders, which swallowed so many tons of manure; neither can we subscribe to such supererogatory and disgusting proceedings as the burying some scores of dead cats and dogs as contributories, being persuaded that just in proportion as any *performer* introduces such materials, in like proportion is he warring against ultimate durability in point of texture of the border.

Such proceedings, however, as mere experiments and illustrations of the feeding powers of the vine, have, doubtless, been in some degree beneficial.

R. ERRINGTON.

THE FLOWER-GARDEN.

After all that has been suggested and done to curtail the over-luxuriance of plants in the flower-garden during the autumn months, the usual complaint of too many leaves, and too few flowers is as rife as ever, and this season we are more likely than not to have cause for louder complaints. After a smart drought in June, July set in more like a damp hot-bed than anything else in the ideas of a gardener, and I never recollect to

have seen a more rapid growth, and filling up of the beds, than we experienced last month, and were it not that the summer-roses and a few other flowers suffered a good deal from the rain, I never saw a finer prospect for a splendid bloom about the beginning of August. But now, even we, on this dry soil, high situation, and fine open country all around, are obliged to curtail the luxuriance in some of the beds—quite a new practice to us; and now I am quite confident that much may be done in this way in places where it is natural to them to go too much to leaf, and the simplest way is to pick off a good number of the largest *top* leaves. When we cut off the greater part of the leaves of the common Indian Cress, or *Nasturtiums*, as they call them in this country, to show off their rich blossoms when we use them for edging plants, the sudden check caused by this cutting stops their growth just as quickly and effectually as you would lock a door by turning the key. In exactly the same proportion as the leaves of any of our *Geraniums* are curtailed, will the growth of the plants be affected. But let us just go to the nearest bed and show the practice of what we preach. It happens to be a bed of the *Fuchsia Carolina*; this, the very finest of all the *Fuchsias*, is a most notorious leafer in a bed, and unless we strip off at least one-half of them, the bed will not be worth looking at all the season. From the main stems of this *Carolina*, smaller branches come forth, right and left at every joint, except a few joints at the bottom, and at every joint there are two leaves, and sometimes three. Now, as soon as the small side branches grow two joints from the main stems, these pairs or triple leaves should be picked off; after the end of June, *all* the bottom leaves below where the secondary branches grow should be removed, and, by following the rule of taking off the leaves at all the joints where branchlets have issued from, the bed has an airy, graceful look from the growth of the plants, and the richness of the flowers are seen to full advantage. The *Salmon Geranium* bed; no, but the next one to it, *Cherry Cheek*, is the one which needs our first attention after the Coral *Fuchsia*. In light, rich soil, like ours, this *Cherry Cheek* is a lazy child of mine, and I would cast it on the world, were it not that the ladies are so fond of it. On stiff, heavy land, and on very poor soil, whether stiff or otherwise, *Cherry Cheek* comes out a very chip of the old block himself, and there is no cause to grumble with it, or pluck off one-third of its largest and last-made leaves; but here I must always give it a good check as soon as it is well established, before I can get a decent truss from it, and for the rest of the season it goes on fair enough. *Punch* is never at home so much as at Shrubland; and I never cut off a leaf of *Punch* till this last July, and that only from one row in a large box on the new terrace. This box was made late in the season to fit a recess, one of Mr. Barry's good hits. It is nine feet long, eighteen inches wide, and eighteen inches deep; this was filled and planted in a hurry, with the best and richest compost one could make, and the best pot plants we could cull out of all our frames, and before one could think of it, *Punch* was so leafy that the finger and thumb had to be applied to it in earnest, and so also with a row of the *Salmon*, which runs behind it. Next to *Punch* himself, this *Salmon* is "the best geranium that ever was invented," as one of our lady visitors remarked this morning. Here it might be remarked, "why do you make so violent a contrast as to plant a row of *Punch*, and another of the *Salmon* in the same box?" If I wanted to evade the question, I might easily get off by saying, that I had no better plants on hand on the spur of the moment—that the thing was got up at the eleventh hour, or, indeed, a hundred excuses which might seem reasonable enough. But I wish rather to explain;—all the terrace and parts of the house facing it, are of the best Caen stone, almost as white as marble, so that none but the brightest or

highest coloured flowers can have any chance of standing so much glare, without being, as it were, drowned. One has only to place a box of scarlet geraniums against a red brick house, or a box of *Queen Victoria* geraniums against a white brick wall, to understand how one colour drowns another, in the language of flower-gardeners. Mixing colours which could not well be drowned, therefore, was the first reason for putting the two in this box; the next reason is one to which I wish to call particular attention. When we put a box of flowers, say of geraniums, in a window-sill, the flowers all grow out to the light, with their backs to the window, so that those living inside cannot see the face of the bloom without going round to the outside. The long box with the *Punch* and *Salmon* geraniums was in a predicament of this sort, which I wanted to correct by the style of planting; it stands in a recess in the south wall of the conservatory terrace, and the top of it stands nearly on a level with the top of the terrace-wall;—all the flowers would turn towards the sun, as those in a window-sill, and people on the terrace could only see the back of them. There is another terrace running parallel with the conservatory terrace, but on a lower level, and people walking on this lower terrace would see the face or front view of the plants in the long box, while those on the upper terrace could only see the wrong side of them. Now the planting of the box was intended to get over this awkward siding of the flowers, and the same plan will cause plants in a window-sill, or, indeed, anywhere else, to look two ways, so that we can now make the half, at least, of the flowers outside a window-sill look into the room, which is a great help indeed, where this style of furnishing, as with us, is carried out to a great extent. We generally plant as many flowers that way, namely, in boxes, vases, and all kinds of portable things as would make a tidy flower-garden to some of our neighbours; and this season, on account of the new arrangements about the mansion, we have doubled the number.

But out of all this array, the two boxes of *Judy*, on the conservatory terrace, which I have often mentioned, are by far the best and the most admired by all the visitors to the place, and they are many. It will be recollected that these boxes of *Judy* are managed on Harry Moore's plan of not turning them out of the mould for years; nor have they had the least pruning these four or five years, and there they are at this moment as good, if not better, specimens of that style of decoration than have yet been produced by any other means. *Judy* is, without any doubt whatever, the very best geranium for box culture, that is, the best that can be had for money—*Tom Thumb* cannot approach it; I have had them both side by side, in boxes, for years, and although I can do very little good with *Tom* in the beds (not better than a third or fourth-rate, as compared with *Punch*), I can get him up to the mark in pots and boxes as well as most people; but it would be a libel on flower-gardening even to think of comparing it to pretty little *Judy*, and yet *Judy* is only second favourite here. A seedling from her by the pollen of *Cherry-cheek* has produced a far superior variety, as much so, indeed, as *Judy* herself is above others in the same section. But I am running away without explaining how to get two faces, not under one hat, but in a flower-box in a window—one face to look in towards the room, the other from it; or, according to the situation, looking to two opposite points of the compass, for this long box has a *Salmon face* inclined to the south terrace, and at the same time a *Punch face* looking as intently in the opposite direction, the north or conservatory terrace, so the box must stand east and west. The row of *Salmon* geraniums was planted first with three-years'-old strong plants fifteen inches high; the *Salmon* being the strongest of those that will do well to be kept low for box culture, and a row of *Punch* on the north

side of it, with one-year-old plants, and only ten to twelve inches high, and in something near to these proportions the two sorts will grow, or will be made to do so, for the whole season. Salmon being the highest, looks south, and Punch being too low to look over the shoulders of the other, turns his back completely to the Salmon, and looks as I have said. Now, this can very easily be managed by one kind only, if that is preferred. Suppose a window-box is to be planted next April with, say—Tom Thumb or Judy;—put in the outside row of stout old plants, and the front row, or that next the glass, with young plants struck six weeks previously, and if the box holds three rows, let the middle one be of medium-sized plants. At the first planting, the leaves all slope in towards the glass, but as soon as the flowers come, the tallest or farthest from the glass will point outwards, and put the front ones so much in the shade, that as many of them will point to the window, as will offer to turn the other way. Now, if a box holds only two rows, and that is quite enough for any window-sill, let the outside row be of *Tom Thumb*, which makes long footstalks to the trusses, and is thus enabled to hold out its flowers far from the leaves; then *Judy*, for the side next the glass, her habit of flowering being the very reverse of that of Tom—short arms and flowers lying almost on the leaves; *Judy* will produce fine trusses for every one Tom shows, but one truss by Tom contains as many flowers as five trusses of *Judy*; the shade of *Judy* is the first remove from the scarlets. This is the best arrangement that can be made at present, but I know of a better by and by. It is not quite true, however, that *Judy* is the first shade out of the scarlets, for *Compactum* is in reality of that shade, but *Compactum* is of a different breed of scarlets, and will not associate in its way of growth and flowering, in such small numbers with the breed of Tom Thumb and *Judy*, which are true descendants of the royal blood of the *Frogmores*.

We have often had inquiries about such and such ways for reducing this tendency of too many leaves, and a scarcity of flowers in the autumn, and among the rest, that of planting out *geraniums* with their pots. At first, and, indeed, for some time, the writers in *THE COTTAGE GARDENER* took it for granted that they were addressing only a class of new amateur readers, and for such they well knew the danger of advising them to plant their beds with plants in pots, and the system was rather discouraged than not, at least, that is the part I acted; but now that Mr. Paxton and Mr. Fleming, with their efforts, and such men as the Messrs. Macintosh, of Dalkeith and Drumlaurick, and others like them, at the very head of horticulture, not only read *THE COTTAGE GARDENER*, but quote it from memory, our task of writing is not half so difficult as we at first found it, because now, although some of our readers might not comprehend our instructions, or follow them out to the letter, we are confident that the great bulk of them do so, and not only that, but by their kindness in recommending *THE COTTAGE GARDENER* in their different localities, they feel themselves, as it were, bound to assist us by explaining more fully the substance of our advice, and thus a sound practical knowledge in our line is being silently and steadily infused among the great bulk of our fellow-countrymen. This is but one view of the subject, which an old friend of mine and I discussed the other night. Mr. James Macintosh, brother to the great author of that name, who is at the head of the first flower-garden in Scotland, (Drumlaurick, one of the seats of the Duke of Buccleugh), or in England either, paid me a visit the other day, and it would mellow the heart of a florist to hear how we discussed the merits of shades and colours. By the by, is it not singular that one never meets with a *lady florist*? All the ladies are on the same side as the flower-gardeners, and all of us put *colour* as the prime or

first requisite in a flower, which is the last consideration in a *florists'* flower. That, however, is not the question; but how are we to get most flowers in the autumn? And here I must eat my own words, for I find, from Mr. Macintosh, and I have his great authority for saying so, that planting out whole beds of *Geraniums* in their pots is a most capital plan, which answers perfectly. He has planted thousands of them that way, but how he does, and all about them, must stand over to another week.

D. BEATON.

GREENHOUSE AND WINDOW GARDENING.

A CHAPTER ON GENERALITIES.—Fine sunshiny weather seems now setting in to replace the dull, wet, and foggy; cheering the heart of the husbandman, as he looks at his waving corn; and rejoicing the spirit of the gardener, as he looks upon the present, and contemplates the future. A busy season is now before him, for it includes, besides the usual cares, propagating for another year, and hardening off his plants for winter and spring-blooming. A few of these I will just cursorily advert to, as a sequel to the chapter in the end of June.

CACTI.—These were lately alluded to. The great thing now to be attended to is to give them every ray of sun-light they can by possibility obtain, and by the middle of the month refrain from giving them water, at least, all the strong-growing succulent kinds. After a very hot day it will be better to squirt the stems, instead of watering at the roots. By the middle or end of the month, the front of a south wall, with a coping to keep off the showers, and turning the plant every day or so, would just be the place for them, until the beginning of October.

DAPHNE.—Who does not like the scent of *Indica*, *odora*, *odora rubra*, and others? Whether for the inside of windows, the parlour, or the conservatory, these are universal favourites. Where there are a number of young ladies, fortunate is the gardener who has such a quantity of large plants, that, like the purveyor for the kitchen among his Brussels sprouts and borecoles, he may "cut and come again." Supposing that these have a shady place in the greenhouse, or in a vinery, or in any place where a little extra heat can be given for obtaining fresh growth, the plants will now require to be set out of doors, first in a place a little shaded, and afterwards full in the sun, giving rather less water as the autumn approaches, and getting them under shelter by the beginning of October, not that they would be likely to suffer from cold at that early period, but because the heavy occasional rains are apt to sodden the soil in the pots so much, as to alter its hygrometric properties, and neutralize the finest system of drainage. Where examining the roots was not attended to in the early part of the season, it may still be done with propriety, but any shifting should be on a small scale; I mean, that the fresh pot should not be *greatly* larger in size, the operation being chiefly confined to fresh drainage, the getting rid of a portion of the old soil, and substituting new. No large shifts for winter and spring-flowering things should be given now, unless in the case of soft-wooded, quick growing plants. Those shifted at this season must have a different treatment from those not interfered with at the roots; instead of placing them in the sun, they should be kept close for a week, then placed in a rather shaded place, and in another fortnight gradually exposed to full sunshine. The best compost is sandy fibry peat, and fibry loam, two parts of the former to one of the latter.

DIANTHUS.—The early struck plants of *Pinks* and *Carnations* should now, without delay, be transferred to the pots in which they are to be forced in winter. Rich, light, fibry loam suits them well.

DIOSMA.—To have these to bloom early in the green house, in spring, they must now have a full exposure to sun and air. It is now too late to shift, but the drainage may be examined, and the pots be surface-dressed with fibry peat and a little loam. *Pimeleas* will require similar attention;—as much light and air as our climate will permit, without being subjected to pelting heavy rains, is what these peculiarly require to secure abundant and early blooming.

DRYANDRA.—Those fond of this singular tribe of plants will have a good opportunity of increasing their stock, by taking off cuttings of rather better than half-ripened shoots, inserting them in sand, over sandy peat and loam, under a bell-glass, in a cold frame; and if there is plenty of substance beneath the sand, allowing them to remain in the cutting pot, after being struck, until the following March or April. If there is nothing but sand in the cutting-pot, the plants would require potting off at the end of autumn; it is safer, therefore, to have something for the plants to feed upon during the winter, and not to transfer them to fresh pots until the invigorating influence of spring comes round. This rule holds good with respect to all plants struck in the autumn, that are at all shy in their habits. Even when in the *Gardener's Dictionary* it is recommended to strike the plants in sand, it is understood that they will not remain *there long* after being struck. In every case where the plants are intended to stand in the cutting-pot over the winter, there should be placed beneath the sand such compost as the plants naturally delight in.

ECHINOCACTI.—These, as formerly observed, hardly come under our province, though we see nothing to prevent many of them flourishing in a greenhouse, or in the parlour-window, *provided* that a high and somewhat moist temperature is given to them during summer, and a high, but dry temperature during the latter part of this and the following months, followed by a dry atmosphere, and a cool temperature, say from 40° to 50° in winter. Amateurs who are fond of the eccentric and the singular, though not deficient in beauty, may cultivate at the greatest *minimum* of care and trouble, these and their allies of *Melocacti* and *Mammallaria*, and many succulents of the *Mesembryanthemum* order. At this season the red-spider is apt to attack them in fine sunny weather, and the amateur cannot do better than pack them all in a close box, or frame, fill a large saucepan with boiling water, or rather boil the water in it, put on the lid close, after smearing it with flowers of sulphur, and then, as quickly as possible, lift the saucepan into the box, after having taken due care to remove the plants to a safe distance that they be not scalded or scorched with the heat. This repeated once or twice, with a good syringing, will be apt to send the troublesome gentry scampering, if it does not altogether destroy them. Although at present I have got few or none of these little plants myself, I can conceive few things more interesting for the limited space they occupy, and as a farther recommendation to those who would like to try the hardest in their windows, I may mention, that if, in severe weather in winter, they were placed on a table in the centre of a sitting room, they would feel much less inconvenience from such a position, than the soft-wooded and hard-wooded plants so generally cultivated.

ELICHRYSUM.—Seeds of these must now be looked after, where it is desirable to increase the stock by that means, saving it over the winter, in dry quarters, until sowing it in a slight hot-bed in March or April. Where a fine show early next season is desirable, the plants must shortly be deprived completely of *all* their flowers, and be set in an airy situation.

EPACRIS.—If these have been kept close in the first part of the summer, the young wood will now be made, and what is wanted is to get it fully ripened by exposure

to sun and air, so that a flower-bud may come at the base of every leaf on the fresh growth. Plants look tolerably well with bloom all over, on short shoots or spurs, but far more elegant when the flowering is chiefly confined to long young shoots. To secure this, the plants must now have as much air and light as possible; the latter, especially, must be given if the beautiful green hue is somewhat exchanged for a brownish-russet, but if no rapid change is made from shade to sunshine, there will be no great danger even of this. If a sudden change is made, the leaves are apt to drop when the plants are transferred for a time to the greenhouse or conservatory; an open, airy situation is now, therefore, requisite. If they were not shifted in spring, as fresh growth commenced, they may be shifted now into sandy fibry peat, but the shifts should be *small*, and consist chiefly in re-arranging the drainage, and getting rid of a little of the old soil. These must be closer and more shaded for a fortnight or three weeks, and should be allowed to bloom all that time later. The *impressa* and *campanulata* groups used to be the finest for winter and spring blooming, but now they are surpassed by the red and white varieties of *hyacinthiflora*. In addition to the beautiful *minita*, there are also very pretty somewhat later blooming kinds, resembling *grandiflora*, such as *conspicua* and *grandiflora rubens*, and a large-flowered pink one, named *Kinghornii*, but I am not sure that these three last are yet in the market. The *impressa*, the *campanulata*, and the *hyacinthiflora*, are the best that has yet been found, so far as I am aware, for early blooming in winter and spring. One great recommendation is, that they can stand a close, and even a moist atmosphere for a time, without alarming you with the *mildew disease*, which is so fatal to heaths, that it is almost impossible to cultivate them with any chance of great success, along with soft-wooded-flowering plants.

PELARGONIUM. (Florists).—These having been hardened, after the beauty of the flowers were gone, by standing in full exposure to the sun, may now be cut down so as to prepare the plants for another year. The form of the plant will greatly depend upon the mode of pruning *now*, some liking a flat squat, and others, ourselves among the number, a somewhat pyramidal shape. Fancy varieties, such as *Queen* and *Statiwski*, (the latter a capital thing both for pots and beds), must not be cut quite so close as the more succulent florist kinds. The cuttings may either be placed in rows, in prepared light soil, in a south border, or in similar rows under a glass, in a cold frame or hand-light. Anything in the shape of bottom-heat for such things just *now* is to be avoided. The drying of the plants before cutting down is advantageous alike for plant and cutting, as both respectively thus possess more highly organised material. The cutting can, therefore, stand more hard treatment with ease, and the plant is more capable of breaking freely and healthily. This effort should be confined almost entirely to the stored-up concentrated juices of the plant, as the less water the plants receive before they have broken afresh, the better and healthier will be the growth. Syringing the tops, and even a moist atmosphere, is very different, in such circumstances, from deluging with water at the roots. When cut down, to avoid even drenching rains, the plants would be better under glass, but with plenty of air. When the plants have broken afresh, then, and not before, they may be repotted into smaller pots, kept close, and duly encouraged with moisture, hardening them with more air and light before the approach of winter. The re-shifting into larger pots, according to the time bloom is wanted, has already been referred to.

ROSES.—Though not following in the sequence of orthography, this may well follow, if interest and esteem for its beauties be sufficient to constitute a claim. Whether for future display in the garden, or in pots in

the window, or balcony, this is a good time for propagating China's, Bourbons, Noisettes, and the most of the Perpetuals, as well as the hybrids between them, with cuttings of good firm shoots. If it is desirable to make the most of scarce kinds by this means of propagation, the best mode is to place the cuttings round the sides of pots filled with light sandy soil, and then place them in a shady cold pit for six weeks, when, to accelerate the rooting and growing process, the pots may be transferred and lodged in a frame, or pit, containing a sweet, mild bottom heat. When fairly rooted, they may be transferred to an open sheltered border, or potted, and kept close until fresh growth has commenced; or they may be kept in the cutting pots all the winter, if there is some nourishing matter in the pots, beneath light sandy soil on the surface. In either case, under good treatment, they will become useful plants the following season.

R. FISH.

HOTHOUSE DEPARTMENT.

EXOTIC STOVE PLANTS.

DIPTERACANTHUS SPECTABILIS (Showy D.).—A new plant lately introduced from the Continent, and said to be a native of South America. The plant is half-shrubby, flowering when about a foot high; the flowers are two inches across, and are of a pleasing blue colour, and very beautiful. They are produced in succession, and continue to appear for several weeks, rendering it a pleasing addition to our stove plants. We can confidently recommend it to our readers as being worthy of cultivation. 3s. 6d. for small plants, and 5s. for blooming.

Propagation. By cuttings.—The best are the young shoots, taken off with two or three joints; cut off the bottom leaves close to the stem without injuring the bark, put them in 5-inch pots in a compost of light loam, peat, and sand, with half-an-inch of silver sand at the top; place them round the edge of the pot, keeping the leaves inwards in the way we have often described; set them under a hand-glass either upon a heated surface of sand, or coal-ashes, or plunge them in a bark-bed, covering the cuttings with a bell-glass which just fits the pot inside without touching the leaves of the cuttings; give them a due share of water without saturating them; wipe the bell-glass now and then, and shade from hot sunshine. With this care and daily attention they will root in a month or six weeks, and should then be potted off into small pots, and placed again under a hand-glass in the propagating-house till fresh roots and growth take place; then remove them to a more airy situation. Even when so young, attention must be given to form the future nice, bushy plants, by nipping or cutting off the uppermost bud or shoot; and as soon as the side-buds begin to break, give them a larger pot. If the business has been well performed this (the potting) will be necessary about the middle of May, and then commences the

General Management.—The plants being fairly established, give them water in moderate quantities whenever they require it. Perhaps in all the operations of plant-culture there are none so important or so little attended to or understood, as watering properly. The best rule we can lay down is *never to water a plant before it needs it*, and especially delicate-rooted plants, like the one we are writing about. Too much water is equally as injurious as too little, the happy medium is the point to be constantly aimed at. When a plant does really need water, give it enough to wet the soil in the pot thoroughly, and no more, and then let the plant feed upon the matter this water dissolves, and give no more till the soil becomes partially dry again. This abstemiousness will be quite as beneficial to plants as to

animals, and will keep them also in robust health. When the pots have become filled moderately with roots, give a third repotting, stopping the shoots again, and tying them out so as to allow fresh central shoots to spring up, which must again be stopped and tied out when they have made sufficient growth. When the plants have reached a foot in height you may expect flowers to appear. They must then be removed into a cooler house, or cooler part of the stove, to prolong the season of bloom. This blooming season happens in July, and then the greenhouse will be the proper place for them. Here, with increased air and light, the flowers will be of a heightened colour, and the plants will grow more robust and healthy. In this house they may remain till the bloom is over. Then cut them in pretty freely; give no water, or only as much as will keep the root-action going on, fresh shoots will soon appear, and the plants will be stout and healthy to carry them through the winter in the stove. In March give them a shift into larger pots, and they will, or should be, then a foot across and a foot-and-a-half high, and the following season will be truly ornamental.

Soil.—We have now a plant of *Dipteracanthus* in fine bloom, growing in a compost of fibrous, fresh loam, sandy peat, and leaf-mould, with a small addition of silver sand. It stands in a house in which Camellias are grown, which, during their growth, is kept rather warmer than a common greenhouse. In this soil and situation it has bloomed well, and grown satisfactorily.

Insects.—The leaves of this plant are thin and delicate, circumstances that render them liable to the attacks of the red spider. The best remedy and most destructive agent is perfect cleanliness. We find nothing so effectual as frequent washing with the sponge and tepid water. This should be used even before the insects appear; for the old proverb holds good in this case as well as in the higher application in morals, that "prevention is better than cure." If a plant, liable to the attacks of insects, is kept clean and healthy, it is not so liable to their attacks, or, at least, it is more able to resist them, and, by a constant application of the right means, the insects may be more effectually destroyed.

T. APPLEBY.

FLORISTS' FLOWERS.

MR. GLENNY ON FLORISTS' FLOWERS.

GERANIUM (W. W.).—It is not new in colour, and is inferior to many we have. Fancy Geraniums are good for nothing, unless the colour is striking. Dull, heavy colours, with scarcely any white, are useless among the number we possess, which are bright and sparkling. However dark a variety may be, if there be a good field of pure white, the contrast would give a brightness; but in the bloom sent, all that can give value to a novelty is wanting. We have not mentioned the name for obvious reasons.

PANSIES (W. B., Morpeth).—No. 1 is paler in the yellow of the side petals than that of the lower one, and the indentation in the lower one is fatal. It appears, too, so alike and so conspicuous in all three blooms, that we fear it is permanent. It should be borne in mind by raisers of seedlings, that thickness of petal is a quality without which no new flower can be tolerated, unless for some extraordinary feature. Now the two light seedlings, Nos. 2 and 3, are too flimsy for anything, even if they were any novelty.

FUCHSIA (J. T.).—The bloom too much withered to show how much it reflexes, but from the remains we augur favourably; the contrast between the sepals and corolla is good, and this is a great point in a Fuchsia. We should like to see another bloom or two by and by.

PANSEY, three blooms, flowers too far gone, but promising. Let us suggest that Pansey blooms come best

between green leaves—a bloom between every leaf. We have had twelve blooms—a card, which just held four without touching, had a leaf cut to its form and laid on it; another leaf cut the same size was laid over them, and a second layer of Pansies; another leaf, and a third layer of flowers, and then a leaf to cover; a second card of the same dimensions was put on the top, and these tied together and put into an envelope to be sent as a common letter. These came to us by post four hundred miles, to all appearance as good as when they were gathered, but of course pressed. In an hour they were perfectly revived.

HOLLYHOCK, KING OF ROSES (Bragg).—The best of its class. It is a bright rosy pink; the ground petals thicker and smoother, and more circular than any even bordering on the colour; the face fuller and better formed than most of the best varieties. We noticed this variety last autumn, and it fully comes up to our expectations. The floral world ought to know that the entire credit of the great advance made on the Hollyhock, belonged to the late Mr. Baron, of Saffron Waldon, who, for years, kept improving upon the flower by raising seedlings from the best of his batch each season, and destroying all that were no better than he already possessed, until he had a score varieties, the worst of which was better by many degrees than the best of all others in cultivation. We urged Mr. Baron to let them out, both plants and seed from plants, and then everybody who chose to grow the flower could be even with Mr. Baron in a single season; but, except in Mr. Baron's hands, the flower made no advance the last half century, until he let out what has been the foundation of all the present fine race. There is no art whatever in the culture, and, like the Dahlia, it sports so much, that all the pretence about crossing is mere nonsense—an attempt to claim credit for ingenuity or originality, and make a fuss about that which requires no trouble. As we saw the march of the Hollyhock under the command of Mr. Baron, the most unpretending, but meritorious, florist of his day, we know that the only thing the plant wants is plenty of room, plenty of air, and plenty of dung; and if an amateur, or a dealer, wants to advance still in the quality or variety of his flowers “by raising seedlings, let him select half-a-dozen of the most striking colours among the best kinds, not such as we have seen recommended as the best, but the fullest flowers with the thickest petals, say white, black, maroon, blood-red, rose, and yellow; plant these together, that is to say, form a clump of them away from all others, and when there are three or four pods of seed set on a plant, cut the rest of the spike off, and, also, any side spikes that may push. Three or four pods will be enough on each plant, and there is no fear but that novelties will reward the effort. We saw the best collections that could be found in the whole country before Mr. Baron let out the result of his pains-taking, and the best was not even an approach to his worst; but all those who bought his set and seeded from them continued to advance; and Bragg's King of Roses, as well as some other of his new flowers, are better than several popular favourites, but in the same way. If we had hastily to decide, we should be apt to say that the King of Roses was the best in cultivation; but we are quite certain there is no pink or rose-colour to touch it.

VERBENAS (No. 1 and No. 2, from Devon).—These flowers are too narrow on the petals to be worth preserving. The Verbena, to be perfection, should be circular; but as it is naturally a fingered flower with five projecting portions, all we have at present accomplished is to get these divisions wider until some nearly join; consequently, we have only approached the best quality. In the two varieties sent, the divisions are as wide as the five joints of the petal; far better are constantly thrown away. Let Mrs. Mills be put by the

side of one of these, and they would appear, by comparison, weeds.

PHLOX DRUMMONDII (Ibid).—Very good; flowers large and round, and not a bad colour;—by pulling up all best round flowers from any batch of seedlings and saving from them, you may always secure good sorts. It is useless to save from the best, if they are allowed to grow among the worst; for all seeds have a tendency.

PETUNIAS (Norwich).—Only one which shows the least improvement on what we possess, and that is in the thickness of the petal. It will not sell as a new variety, but will be good to seed from, for the chance of procuring better with the same good quality. The divisions are too conspicuous, and the colour common.

FLORISTS' FLOWERS CULTURE.

THE PELARGONIUM—(Continued from page 273).

Propagation: By Buds.—By this term we do not mean budding, but putting in single buds or eyes as cuttings. This is a new practice, and is thus performed: First, make a shallow pan ready for them, by first putting in a portion of pure loam and sand, then a covering of pure sand alone, give a gentle watering to settle it, and then prepare the buds. Take a shoot of moderate strength, cut off the leaves, but not quite close to the stem, then cut off the two lowest buds, leaving about a quarter-of-an-inch of wood below each bud. After that, split the shoot containing the two buds down the centre. If the two buds are not exactly opposite, but one a little below the other, the upper one must be shortened below the bud to the proper length. The upper cut should be very nearly close to the bud. Make a sufficient number ready at once to fill the pan or pot. When that is done proceed to plant them, using a short blunt stick a degree thicker than the bud-cutting. Insert them deep enough, so as only to leave the bud just above the sand. Plant them close to, and round the edge of the pan, placing the cut side close against the pot, which will of course place the bud side inwards. Then fill up the holes with a little dry sand, and water gently again. Place them either in a propagating-house, a shady part of a stove near the glass roof, or in a frame placed under the circumstance described at the page referred to above. Shade from bright sunshine in whatever situation they are placed, and water as required. The buds will soon break and show leaves shortly to be followed by a shoot. This will soon require roots to support it, and will send down sap, which will cause, first, a callosity or swelling, and then roots. Now, this method has the advantage over a cutting with leaves, of having a less surface for evaporation, and for damp to take hold of, consequently the bud is not so liable to perish from the juices drying up, or from the moisture acting upon the non-growing leaf, and so causing it to decay before roots are produced. At the same time, we candidly confess that this way of increasing Pelargoniums is new, and its success, as our northern neighbours would say, *not proven*; but reasoning from analogy in the well-known successful practice of raising vines from eyes or buds; we judge there is little fear that it will be completely successful, we invite our readers to give it a fair trial, and communicate the result. The buds that have been put in, have, at Pine-Apple Place, so far, progressed satisfactorily, not one having, as yet, perished.

By Roots.—Some kinds of *Fancy Pelargoniums*, and most of the *Cape original species*, are difficult to increase by any of the above methods. In such extreme cases there is left the mode of increase by cuttings of the roots. This is almost certain of success. Take an old plant, shake off carefully all the soil, and cut the roots into short pieces, retaining as many fibres as possible to each. Put each root-cutting singly into as small pots as

they can be got into, leaving the top just visible. Place them in the house, or frame, appropriated to propagation; give a gentle watering, and shade effectually. New roots will soon push forth, and then shoots will appear, generally in clusters. When that takes place, reduce the shade, to give colour to the leaves and strength to the shoots. As these advance in growth, thin them gradually, by slipping one or two off at a time, till finally they are reduced to one which is to form the future plant. As soon as this shoot attains the height of two or three inches, nip off the top to cause side shoots to grow, and so form a neat bushy plant. This method we have proved, in difficult cases, to be a successful one, and, therefore, can confidently recommend its adoption with such plants as do not readily increase by the more ordinary methods.

General Culture.—This will embrace three periods—the growing season, the flowering, and the resting season. The first and the last being states or periods necessary to produce in high perfection the middle one. The means and materials to cultivate these fine flowers are, 1st. A good greenhouse. 2nd. Proper compost. 3rd. Good garden pots; and, lastly, good kinds. We need not insist upon all these being of the best-known. It is self-evident, that to expect perfect success, every point must be jointly and separately of the very best character.

1st. *The house to grow them in.*—Pelargoniums, like all other large families of plants, require a house to themselves, and peculiarly adapted to produce fine specimens. This naturally leads us to consider what is the best form. We unhesitatingly say the span-roofed form is the best; and for this satisfactory reason, that the plants in such a house grow on all sides alike, not the one-sided things that are too frequently seen, even at exhibitions of high character. The sides of the house should be of glass, the side windows should move up and down to allow a large circulation of air, and the top lights should also be moveable, to let out the upper stratum of heated air. The plants should be placed upon stages near to the glass. These stages ought to be broad enough to allow large specimens to stand clear of each other upon them. The size of the house will depend upon the means of the cultivation, and the number intended to be grown. To exhibit collections of ten or twelve in number, three or four times during the season, the house should be at least fifty feet long, and twenty feet wide. This will allow a stage in the centre ten feet wide; walks round it two-and-a-half feet wide, and a platform all round two-and-a-half feet broad. This will leave the stage ten feet wide, and forty feet long, which will be ample space for three rows of twelve plants in each, full-sized and well-grown specimens. On the platforms next the front light, smaller-sized plants may be placed to succeed the other when they become unsightly through the bloom being over.

T. APPLEBY.

(To be continued.)

THE KITCHEN-GARDEN.

CABBAGE-PLANTS.—Pay good attention to these with regard to pricking-out in due season, and keeping the earth's surface open and healthy by frequent stirrings. Make one late sowing for spring planting, and should the mildew make its appearance amongst the small plants in the seed-beds, dredge with chimney-soot and fresh slaked lime. Dry wood-ashes and charred-dust

are also very good preventives; and where sulphur is obtainable at a reasonable rate it is a famous thing to mix with either or any of the above articles for destroying the mildew, and all are excellent stimulants to the plants.

CAULIFLOWERS.—It has been customary for generations past, and still is practised amongst old gardeners, to sow the principal crop of *Cauliflowers*, for their stock of hand-glass and spring plants, about the 18th of August. The plants, they contend, get stout and strong for standing against the severity of the winter; but we contend, that, in consequence of their being thus early sown, the checks they meet with during the winter are too severe; and when planted out about the second week in November, according to the old custom, the soil about them becomes, by the month of March, so very close, cold, and adhesive, that instead at that season of their making a vigorous start into growth, many of the plants are very likely to button, that is, to show a little flower about the size of a button, whilst others get crippled and stunted, black-legged and cankered, neither showing promise of making a luxuriant growth, or producing fine Cauliflowers, as hoped for, in April or May. Our system has long been to sow our *Cauliflowers* the first week in October, on a very gentle bottom-heat close to the glass, and to prick them, as soon as they can be handled, on some kindly soil, again close to the glass. The last week in October, and the first week in November, they are potted into small 60's, and plunged under frame or pit-lights, still close to the glass, and in due season they are again shifted, as required, into larger pots. At the beginning of January they get their last shift into 7-inch pots, that is, those intended to be turned out under hand-glasses the first week in February; but those plants intended to be grown on, and forced in pots in some hothouse, are, of course, shifted into 10-inch or 12-inch pots; and those intended to be planted out into the borders and quarters are pricked into temporary shallow frames and turf-pits, in order to apply temporary shelter during the severe winter weather, by placing over them spare lights, thatched hurdles, &c., &c.

There are several advantages to be gained by the foregoing treatment; the early-cleared celery ground gets well manured, trenched, ridged, forked, and stirred about previous to February, by which time the soil is become in a very pulverized, healthy condition, ready for the Cauliflower plants, and the hand-glasses, which have been all thoroughly cleaned, repaired, and packed away during the winter months, are sound, sweet, and clean, and the plants being strong, healthy, and fresh-rooted, no check takes place if they meet with the treatment we recommend in the Calendar during the early spring months, and fine Cauliflowers will be produced by the middle of April, when winter vegetables are getting scarce; and there is no doubt that the hand-glass will produce finer Cauliflowers, by such practice, in about nine or ten weeks, than they could do on the old system of lord-mayor-day-planting, in six months; the wear and tear of the glass, too, is so much the less, besides an immense saving of labour and trampling of ground, slug hunting, &c., &c., which must be attended to when planted out in autumn.

The *Cauliflowers* saved from seed should be well attended to this month, as a destructive mildew often attacks them in gardens, and causes abortiveness and disappointment, which timely dredgings of sulphur vivum will effectually prevent.

JAMES BARNES.

MISCELLANEOUS INFORMATION.

STATE OF FRUIT CROPS.

	<i>Peaches and Nectarines.</i>	<i>Apricots.</i>	<i>Plums.</i>	<i>Figs.</i>	<i>Gooseberries.</i>	<i>Currants.</i>	<i>Apples.</i>	<i>Pears.</i>
EXETER. Westerly exposure, about 600 feet above sea level.	Thin.	Thin.	Very thin.	Heavy.	Heavy.	Heavy.	Heavy.	Middling.
TUNBRIDGE WELLS (Kent). Soil, loam, on sandstone; not liable to fogs.	Failed.	Failed.	Magnum Bonum, Diamond, &c., good; Reine Claude, failed	Abundant.	Excellent.	Excellent.	Magnificent.	On Quince stocks, good.
BLACKHEATH (Kent).	Failed.	Failed.	Thin.	..	Abundant.	Abundant.	Abundant.	..
CHELMSFORD (Essex). Low lying; liable to fogs.	Hardly any.	Hardly any.	Very few.	..	Abundant.	Abundant.	Good crop.	Very few.
HULL (Yorkshire). Soil, low, on clay.	Very thin.	Very thin.	Very thin.	..	Full crop.	Full crop.	Full crop.	Partial.
RAVENGLASS (Cumberland). Valley near the sea; snow on the mountains on the 4th of July.	Scarce.	..	Thorough crop.	Thorough crop.	Scarce.	Scarce.

BEES RAISING AN ARTIFICIAL QUEEN.

My apiary having now increased itself to nine stocks, it would be but a wearisome business to both reader and writer to carry on its history in anything like a systematic order. As an apiary, therefore, we must bid it farewell. I propose, however, from time to time, to give some account of the individual hives in it, as occasion shall offer; and I doubt not that many of your apiarian readers will be glad to follow the course of an experimentalist, sometimes, it may be, erratic and unsuccessful, but oftentimes instructive and amusing. I do not pretend to hold myself up in this place as a *model* bee-keeper, or to set forward my treatment of bees as the type of what ought generally to prevail, yet I am vain enough to hope that I may be able to suggest some useful hints soon to old bee-masters, and to spur some of our younger and more ardent lovers of the honey-bee, to aim at the discovery, if possible, of new facts, and an improved system in bee-management. As Mr. Payne, our ingenuous and kind-hearted chief, has given us a stimulus to exertion, by stating his belief that our favourite recreative pursuit is "*still in its infancy*," we will persevere, in hope of acquiring fresh knowledge, and in full confidence of success.

I have had some interesting experience, and curious, too, this season, the detail of which will occupy two or three articles in your valuable paper. The year opened, as everyone will remember, with a temperature extraordinarily mild and even, so much so, that many gardens (my own amongst the number) presented quite a March-like appearance very early in January. My bees felt its influence as well as my flowers, for on the 12th I had quite a flight of pollen gatherers from two artificial stocks of last autumn formation (only half full of comb), which were situated in one of my cottage windows, twenty feet from the ground. They gathered chiefly from the laurestinus, of which there was a fine bush in the garden. That these stocks bred very early, was further evidenced by the rejection of several young grubs imperfectly developed, though fully grown about five weeks later. Notwithstanding this early disposition to breed, their stocks, I am bound to say, have on the whole disappointed me, although both, at the time I write (July 19th), are *very* heavy, and from one of them I hope to take two full combs of honey from a corner of the hive in a few days (weight probably 8 lbs.), in addition to 3½ lbs. already taken in a bell-glass. The other has worked some beautiful combs in a large glass surmounting their box, but what honey they stored in it at the end of June has since been carried below. Both these hives, however, would, I am persuaded, have done much more (bad as the honey-season has been), but for the fatal gales of wind we had here in the early part of June, which must have destroyed thousands of my bees from every hive, who having once issued were

utterly unable to return, owing to the exposed situation of the apiary. Early as the bees stirred from these hives* in search of pollen, it was not till full a month later that any bees from my other stocks were discovered so laden. On the 12th of February, a few from my original stock (A)—a swarm of May 25th, 1849—were seen to enter their hive with pollen on their thighs, and in a few days every one of my above-ground stocks, six in number, were, and continued, in full activity as the weather permitted.

My original stock (A) became now an object of great interest to me. Its queen, I considered, must now be drawing near the completion of her full term of life; as in May or June of the current year she would, probably, attain the age of four years. Would she die before making preparation for the welfare of the community? and if she did, would the bees have strength enough to recover in due time? These, and other questions of an interesting nature, suggested themselves to my mind, so I determined narrowly to watch the course of events. As April advanced, I became aware (active as they had been before) that less and less pollen was carried into the hive every-day, and it almost ceased by the 25th. I resolved on this day, therefore, to inspect the condition of the hive, which I did after fumigating the bees with *Racodium cellare*.+ Not an egg of any kind was found in the box, though I cut out much comb (thinking it a good opportunity to renovate it, much of it being already quite black, though only two years old), and only a few grubs yet remained not ceiled over, and *most of these were drones*; nor were there more than a few dozen cells at all occupied with brood of any kind. Evidently the queen had ceased to lay for *at least a week past* (when probably she died), and then very languidly. There were, however, two royal cells *artificially* formed, ceiled over near the top, in the warmest part of the hive. These I cut carefully out with the comb belonging to them, and adjusted in a five-inch glass, which (well covered with warm flannels) I set over the centre hole of the hive, as soon as the fumigated bees, none of whom (and they were very numerous) were destroyed, had been returned to it. They did not, however, take to the glass till the following day, though frantic with excitement in the interim; and when they had taken to it, so cold was the temperature at night (often below the freezing point) that I found the glass deserted every morning, though re-occupied again by day. On the 29th one of the royal cells was found open and empty, but as there was much whitish matter at the bottom, I concluded that the bees had destroyed the grub. But what could this mean? Was there a reigning queen after all in the

* I should be very glad to learn what success, if any, those of your readers have met with, who formed *artificial stocks* last autumn.

+ This operation was more successful than any of a like kind I had before experienced, but I had the same difficulty to dislodge the bees from between the combs.

hive, perhaps reared in another royal cell which had escaped my notice? Anxious to ascertain this, I fumigated and examined the interior of the hive again with more care than before, but there was no sign of a queen or a royal cell. Finding, after returning the bees, that the glass continued to be deserted at night, I removed it and opened the remaining cell, where was a full grown and perfectly-developed nymph of royalty, still white, but evidently wanting but a few days to her escape from imprisonment. She was quite cold, however, and shewed no signs of animation, even though I held her to the fire. Again was the hive in commotion, which continued till I had adjusted in the same glass a beautiful piece of white comb cut out of one of my artificial stocks, containing both eggs and young brood in worker cells. Still was the glass deserted every night till the 10th of May, up to which time, though six or seven royal cells had been formed, they never made more than a three or four day's progress, being regularly demolished, and the grub dragged out. Doubtless the cold had killed them. Wearied at last with this state of things, on the 10th I fumigated the hive a third time, and joined the bees to one of my weak stocks up stairs, which they very materially strengthened. Had the weather been warmer, and of a more propitious character, no doubt a queen would have been hatched out in due time; and certainly so, had I not meddled with the hive at all.

A COUNTRY CURATE.

TO CORRESPONDENTS.

BEES IN KING'S SAFETY HIVES.—*Melittophilos* writes to us thus:—"I last year commenced bee-keeping, in entire ignorance of the subject, and without having previously given it a thought; excepting that I always considered the plan of suffocating these industrious and most interesting creatures, which all my neighbours pursue, as a very cruel, and as I now think, a very unwise one. Early in 1850, I visited an apiary at Cambridge, where King's Safety Hives were in use, and at the recommendation of the master, purchased two of them. These were stocked with good swarms; the one in May, and the other in the early part of July. They were placed in a south aspect, and appeared to me to work well during the summer and autumn; but excepting that each commenced forming comb in one of the drawers, nothing else resulted, nor, perhaps, had I anything else to expect. When winter approached, I removed the hives to a northern aspect, thatching them well with straw, and when the spring arrived, removed them back to their former situation. At the latter end of May last, I took a drawer from one of these hives, and found about 2½ lbs. of comb and honey in it; but much of the comb contained brood. The week following I took a drawer from the other hive, in which the comb was not half filled with honey, and very few cells were closed up. The taking these drawers so early, I now believe to have been a very ignorant and foolish proceeding. In June each hive threw off a good large swarm, and as I had nothing better at hand, they were hived in common cottage hives, and in about a week after this I had two casts, one of them a very small one, but not being on the spot at the time, I do not know from whence they came. These I also hived in cottage hives, so that I have now four cottage hives, and two of King's Safety Hives—all occupied. Since the swarming, these latter stocks have each filled a drawer with comb and honey, but the cells are not yet closed. With respect to the kind of protection necessary for the hives, I find Mr. Payne discards bee-houses altogether, but surely something may be allowed, that is a little more sightly in a garden than milk-pans. And I should like to have your sanction to a simple shed, weather-boarded on the roof, and at the ends, but with open back and front. The floor-boards of the hives to be placed on strong bars about 18 inches from the ground, and under the apex of the roof. What the length of the pitch of the roof should be, so as effectually to screen the hives from the sun and rain, I would beg to be informed; and also how high the apex should be from the bars on which the floor-boards are placed. The ends and roof might then, I think, be covered with honeysuckle and roses, and would be rather ornamental than otherwise. The floor-boards would of course be placed at a sufficient distance from each other to allow of their easy removal for any operation that might be necessary." Your bees should not have been allowed to enter the drawers of "King's hive" until three weeks after they had been hived, their going immediately into the drawers is the reason that brood was found in them, they were also taken much too early. Your casts should have been united. (See THE COTTAGE GARDENER, vol. ii., page 104). Your best plan now will be to get some of the bees from your neighbours (all of whom you say pursue the plan of suffocation) and join them to your two casts, and then make up the stocks by feeding, to 20 or 25 pounds each. (See COTTAGE GARDENER, vol. ii., p. 340). For the method of getting your neighbours' doomed bees (among whom we trust your example will put an end to the fire-and-brimstone process), see COTTAGE GARDENER, vol. iv., page 279, and the *Apiarian's Calendar* for August, in our last number. Let your cottage hives, and "King's boxes" remain as they are till next year; put the swarms which issue from them next season into Payne's Improved Cottage Hives, and Taylor's Amateurs Box-hives, and then in the autumn drive the whole of your old stocks; leave your drawers as they are. Mr. Payne recommends the milk-pan, not only on account of its being a most effectual protection from wet, but for its cheapness also, and when painted is not so very unsightly; however, he has no objection to the kind of shed you mention, but you must have sufficient room between the bars on which the floor-boards are placed, and the apex of the roof, to put a straw cover over glasses that may be placed upon your Improved Cottage Hives, which will require your roof to project a good deal, both in front and back, to protect your hives from driving rains.

CRASSULAS (A. B. C.).—As soon as they have done flowering let them go dry for a week or so, then cut them down, and let them break just like geraniums. Keep them close to the glass all the winter, with no more heat than to secure them from the frost, and no more water than will keep them from shrivelling; shake them out of the pots in March, and begin to grow them slowly and close to the glass. These will not flower next year, but the year following. That is *one way* to meet an extreme case; but the same result would be obtained by keeping them uncut till March, and all but dry from October till then. Not knowing, however, the size or age of your plants—whether they have flowered this season or not—it is impossible to answer you to the point: read their culture in our first volume, and then let us hear from you. Plants of all kinds that were cut down or stopped last spring, or those from cuttings put in then, have now nearly finished a season's growth—by all means such plants should be ripened this autumn, either in or out of doors, and also be kept rather dry all the winter. This is a good time to put in cuttings of them, to flower next June, or to be stopped next spring for flowering next June twelve-months. The best rule as to "water and temperature during the winter," is, dry in winter, and water in summer, and low temperature at all stages of their existence. If you could keep them at 35° all winter, and for the rest of the year no more heat than our open climate gives, you would succeed. Gardeners can force them early in the spring, after cutting a potting; but heat is a most dangerous agent for them under amateur culture.

VARIOUS QUESTIONS (Flora).—The *Arbutus* bears to be cut down or pruned at any time; but the early summer months is the best time. Can any of our readers give a recipe "for preserving the berries of the *Arbutus* for garnishing?" We are not aware that any of the *Verbenas* bloom through the winter in a heat of 60° to 65°—that is, in the heat of an orchid house. "What occasions a black mildew on leaves, and what will hinder it?" Can any of our readers tell what? *Orange-trees* in health usually blossom every year in the spring, or early in the summer. The shoots ought to be pruned annually, more or less, after flowering, and any strong new shoots ought to be stopped. Medium-sized wood blooms best.

BIGNONIA JASMINOIDES (Ibid).—This most beautiful climber has been in bloom with us on the open wall these six weeks, and will last so till late in September; but it is anything but "vigorous," like yours. We believe it never flowers well if growing strong;—root-prune immediately. Open the ground about the roots, and cut one half of the strong roots six inches from the stem, and see what that will do. You must get it to spur like an old pear-tree before it will be "a sheet of bloom."

BEES (An Incumbent).—The reason why your bees ceased working in the super, after they had swarmed, was on account of the population of your hive being by that circumstance greatly reduced. When a cup, or glass, is partially filled, and the bees swarm and cease working in the glass, it is better, after three weeks, to remove the glass from the old stock, and place it upon the swarm, where, in a very few days, it will be finished. Your "brother apiarian," whose bees are carrying on their work in a glass after having swarmed, must be residing in a remarkably good locality. You should have *inverted* the hive you wished to drive the bees from; in future do so, and if the two hives are exactly of the same size at bottom your object will be accomplished in a very few minutes; the best time for this operation is from twelve to two o'clock, upon a bright day. See the article "*Forcing Swarms*," *Apiarian's Calendar*, in THE COTTAGE GARDENER, page 275, present vol.

SIZE OF HIVES (A Beginner).—Your hive, which you say, holds sixty pounds of honey, is much too large for the depriving place. If you wish to encourage your bees on the depriving system, get Payne's Improved Cottage Hives, and follow the directions given in his book, which you say you have. This hive will hold a sufficient winter's supply.

ROSES FOR SOUTH WALL (Weston).—Your south wall, six feet high, and well sheltered, would do for the best Tea-scented varieties; but as you want "rapid growth," a selection of the hybrid perpetuals will suit you best, and they, too, are as much "evergreen" as the climbing ones of that name. Take *Baronne Prevost*, *Duchess of Sutherland*, *Comte d'Montalivet*, *Earl Talbot*, *Madame Laffay*, *Mrs. Elliot*, *William Jesse*, *Geant des Batailles*, and *La Reine*. *Madame Laffay* and *Mrs. Elliot* are the best to bud others on, and on them you might establish the best Bourbons and Tea-scented against your wall.

BEES (D. Powell).—You say, "I have now a stock-hive, removed on 28th March last, which seemed to do very well, as the bees appeared active, and carried in large quantities of pollen. I bought them in one of the old bell-shaped hives, and have been expecting a swarm for the last six weeks; and although they have frequently clustered in large numbers, yet, in consequence of the very changeable weather we have had here, I have no swarm up to this date. I, however, am daily expecting one, as the clustering still continues on every fine day." It is very desirable that your bees should *not* swarm thus late in the year. You will risk the loss of your first stocks by having them removed at this season. Wait, by all means, till next spring; let them swarm, and put the swarm into Payne's hives. By liberal feeding in September, you may enable a stock that has neither comb nor honey (provided that it be rich in bees) to lay up a sufficient store for winter.

BEES (J. V.).—By no means think of transferring your bees; let them remain as they are, and put the swarm from them next year into your "new painted hive." If your hive at Michaelmas weighs 22 lbs. it will be sufficiently stored for the winter. If you get any of the cottagers' "rejected" bees, put two or three stocks together into an empty hive, and by giving them about 27 lbs. of syrup made with 1 lb. lump-sugar, ½-pint water, and 23 lbs. honey, boiled three minutes, you will have a good stock well stored with food for the winter. Pay no regard to the queens, the bees will settle that matter themselves. Feed your bees in September till they weigh 20 lbs. You had better not remove your bees till winter. A straw hive does *not* require a condenser.

ROSES FOR NORTH OF IRELAND (J. N., Omagh).—In answer to your request for a list of varieties "to flower as early and as late in the year as possible," we have the following from one of our best rose growers. **HYBRID PERPETUALS.**—*Amandine*, blush; *Baronne Prevost*, brilliant rose; *Baron Hallex*, light crimson; *Countesse Duchatel*, crim-

tubers as well as in the haulm, so that, despite the intensely hot and dry July and early August, we have had the old enemy commit ravages wherever any opportunity offers. The disease was most virulent among the lowest lying and latest plantations. These, however, with two or three other instances of which we have heard, are the exceptional cases; the prevailing and most gratifying testimony is, that in potatoes, as in wheat and barley, the crops are excellent and far above an average.

Let us add our warning, founded now on years of experience, that there is no plan of preserving potatoes so effectual as storing them in a dry cellar or out-house, in alternate layers, with dry earth, sand, or coal-ashes. It is the most rational mode, even if it had now to be first suggested, for it is imitating as closely as possible the natural mode of preserving the tubers.

Our rules are, 1. Let the haulms, before forking up the potatoes, be turned so yellow as to show that the tubers can derive no more nourishment from the stems. 2. Fork them up and store them during dry weather. 3. Let the potatoes, the storing materials, and the store-place be dry.

GARDENING GOSSIP.

By the time this reaches the reader, the *Show at the Surrey Gardens*, at which it is understood no entrances are to be paid for showing, will have come off, and, doubtless, a good one; but the schedule of prizes, the plan, and all belonging to it, are so identified with the South London Society, that it will be chiefly among their own members; and so little has the publicity given to it differed from that of their own shows, that very few, except their own members, will compete for the prizes. We see a good many exhibitors, and very few beyond those who usually attend, even know but that it is an extra South London Show, and, until we pointed out the difference, some had not intended to exhibit. Had it been advertised conspicuously as a show upon the same plan as those at Chiswick and the Regent's Park, instead of an exhibition under the same management as all the others, it would have been far more extensive. That it will do well we are convinced; for we know some, who, much to their credit, show to make a display for the spirited proprietor. Southby will, in his show of fireworks, do something appropriate to the occasion.

We shall be much obliged to the *Dahlia* growers, if they will try a little experiment to check earwigs and other insects which take liberties. India-rubber, when lighted, drops a portion which does not congeal again very readily, if at all. This is very sticky, like bird-lime, or more so, perhaps, than that article. With a little bit of wood touch the stem of a flower all round, but make a very narrow stripe, as soon as the bud begins to tempt the marauders. If they crawl by that little impediment, they will use the experimentalist worse than they do us. We are indebted for the hint to a gentleman, who shall have all the credit if it be successful with others; but we beg it may be tried, and the result reported to us.

Grafting the Cactus and Epiphyllum tribe.—This is so very simple that it is a work of supererogation to say anything about it, perhaps, but I found the union hastened greatly by a very trifling operation. After the graft was fitted and tied in its place, I scraped or pressed the juice out of a bit, and applied it all about the join. I was of opinion that it would, at least, close up any little vacancy and keep out the air; I was not disappointed, there was no shrivelling of the part, and the leaves of *Truncatum*, *Speciosum*, and several hybrids of similar habit, never flagged. As the union of all grafts depends on the exudation and mixture, as it were, of the two saps, it may be worth inquiry, whether the application of extra sap, sufficient to varnish, as it were, the joint, might not facilitate the union in grafting any of those subjects which are the most difficult.

We have already said something about *Balsams* that were grown fine last year. The following very short lesson was given, *vivâ voce*, at a recent meeting for discussing such subjects. Seeds of *Balsams* were sown, half in March and half in April, in a common stove; as soon as they had come up, they were potted into 2-inch pots, and put along the front, close to the glass. Here they were successively changed to larger pots, only one size at a time, being removed further back that the slope of the glass might give them room; and when they were in 5-inch pots, they had become nearly a foot high, and were placed as far back on the front stand as they could come. When shifted into 6-inch pots, they were transferred to the greenhouse, next the front light, which, being upright, gave them plenty of room, and here they began to swell their buds. Those of which the buds were open at first, and exhibited their green petals closely rolled up, were now changed to the largest-sized pots they were to occupy (8-inch); while the others, which exhibited a closed pod, were deemed second best, and were turned out for the open ground. We need hardly say that they were watered regularly, and that the succeeding sowing went through exactly the same routine; the result was a fine stocky growth, not exceeding two feet from the pot, well branching out at the bottom, and covered all over the stems with blooms of a large size. The soil, rich loam, with vegetable mould and turfy peat in equal portions; and by shading the greenhouse, the bloom was prolonged several months. We have repeated this as well as we could, because, although the *Balsam* may be grown several ways, it will be extensively cultivated next summer.

E. Y.

NEW PLANTS.

THEIR PORTRAITS AND BIOGRAPHIES.

SMALL-MOUTHED SIPHOCAMPYL (*Siphocampylus microstoma*).—*Paxton's Flower Garden*, ii., 33.—Another addition to this popular genus of showy plants, which is included in the Natural Order of *Lobeliads* (*Lobeliaceæ*). All the species in the order have a white, milky juice, which is very acrid, if not poisonous, producing, when taken internally, vomiting, and even death. The *Sipho-*

campyls are gay stove or greenhouse plants, prized by cultivators for the ease with which they are increased



and grown, and the little room they occupy in winter when at rest. Flowering, as they chiefly do, on the soft shoots made the same season, like the old garden Lobelias, they may, like them, be well cut down before the winter, and stored away where many good things could not be trusted.

With botanists these plants are considered as anomalous, for they partake of the structure of *Bell-worts* in the hairs which clothe the stigma, as do the collectors, or brush-like style of Bell-worts; and they also participate in more than one of the commonest forms met with among *Composites*, as, for instance, their Syngenesious anthers, and the split divisions of the flowers, so much like a ligulate floret in the Composite order. The genus was named by Pohl, a German botanist and botanical traveller, long before any of the species were subjected to cultivation. In the system of Linnæus the Siphocampyls are stationed in the first order of the fifth class, *Pentandria Monogynia*. The name, taken from *siphon*, a tube, and *kampylos*, a curve, alludes to the curved form of the tubed flower.

Siphocampylus microstoma was discovered by Mr. Purdie, in New Grenada; and its large scarlet flowers are, perhaps, superior to any other in size and richness. *Stem*, smooth, inclining to climb; *leaves*, pointed egg-shaped, with glanded teeth on the edges; *flowers*, with top-shaped calyx, corolla downy, rather contracted at the mouth, and unequally lobed; lower two anthers bristly.

THE SPOTTED GOLDEN CHYSIS (*Chysis aurea*, var. *maculata*).—*Botanical Magazine*, t. 4576.—This is a beautiful variation of the type species on which the genus *Chysis* was founded by Dr. Lindley, and is from Colombia, the same country where the first form of the species was discovered—not Columbia, as we have

seen stated somewhere. Two other species of this genus, *bractescens* and *lavis*, have been introduced from



Mexico. *Chysis aurea*, of which this is only a variety, has the flowers of a golden yellow, as the specific name imports; and *maculata*, the subject before us, differs from *aurea* in having the middle part of the labellum, or lip, white, with distinct purple blotches, or large spots, while the rest of the lip is of the same hue as that of the species—clear yellow. The upper part of the sepals and petals are also blotched with orange-brown spots; hence the distinguishing name *maculata*, or spotted.

These two forms of *Chysis* partake also of the same habit, they hang down from the branches of trees, suspended in the air by their long fleshy roots, and the long pseudo-bulbs wave about with the wind. The flowers of *maculata* are deliciously fragrant, and continue a long time, in the dull winter months, if the plant is kept from being excited by too much heat and moisture—the two principal agents in the cultivation of this tribe. Altogether this may be taken as a rich addition, and a new one, too, to the most select collection, or by the most fastidious in the choice of orchids; and the natural habit, as above noticed, will readily suggest the appropriate mode of cultivation, namely, to be suspended on blocks of wood, like *Aerides* or *Vandas*. It was introduced in 1850, by Messrs. Lucomb, Pince, and Co., of Exeter, and flowered with them last winter. In the natural arrangement of the genera in this order, *Chysis* is placed between *Barleria* and *Cattleya*, in the *Lælia* section of the *Epidendrums*, and all orchids are Gynandrous, and in the twentieth class of the Linnæan system. The meaning of the word *Chysis* is melting, and alludes to the fusion-like form of the pollen masses.

B. J.

THE FRUIT-GARDEN.

STOPPING FRUIT-TREES.—There has been some contention of late years about the propriety of stopping, as it is termed, the young shoots of our more tender fruits, but it is easy to perceive that the practice annually gains ground. Indeed, when we come to consider the

case of our hardy fruits in former years, when we might very frequently meet with peaches, nectarines, and apricots, in the months of July and August, almost smothered with raw-looking spray, and looking more like privet-bushes in the shrubbery than tender fruit-trees; it is no marvel that some fresh step should be taken—some departure from the then existing practice.

Let us here repeat, that a thorough ripening of the wood is *alone* the foundation of successful fruit culture. Even such hardy things as gooseberries and currants are amenable to this principle, which, in giving extra solidity to the parts, gives at the same time fructifying powers. It is needless here to urge that sunlight is the chief agent in this process: all seem to admit the fact, yet few carry it thoroughly out in practice. Now, if sunlight, by shining uninterruptedly on the foliage, is productive of fruitful habits, it is plain that all unnecessary obstructions should be removed in due time, whilst the tree is in full possession of its elaborative powers.

It is here necessary, for the sake of the learner, to make a distinction as to the character of the foliage, which in most fruits, and as applied to the case in hand, is divisible into two classes, viz., that in immediate connexion with the embryo fruit-spurs, and that which is simply the result of an effort to enlarge the system of the tree. The one, it may be presumed, has a direct and immediate office to perform, the other an indirect, and, in many cases, a remote one. These things ought not to be confounded; it is only by a proper classification of the functions of a tree in the "mind's eye," that distinct and accurate views of the somewhat latent processes of Nature can be obtained. Thus much as preliminary to a few remarks on the practice termed "stopping."

Stopping is, or should be, practised for the following purposes:—

- 1st—To check gross shoots.
- 2d—To admit light.
- 3d—To check root action.
- 4th—To concentrate the energies of the tree.
- 5th—To ripen the wood.

To which may be added, stopping for the extirpation of insects. This, however, is done more on expedient than on principle. The No. 1 procedure is principally exercised soon after the trees begin to shoot in spring; the effect of this is, forthwith to equalise the distribution of the *ascending* sap. No. 2 is practised at a more advanced period, generally after the disbudding is completed. We use it as a preliminary step to the total removal of superfluous spray. No. 3 is a consequence involved in the No. 2 procedure. It may be taken, we think, as a maxim, that as the branches are in point of rapid development, so the root-action is, or soon will be. There are, of course, some trifling exceptions to this, but such will in general be found the true bearing of the question. Of course, where trees are already too weak, such an operation would be folly; trees of this character, however, seldom produce too many shoots. No. 4. That the stopping of fruit-bearing shoots at a certain period has a tendency to concentrate the fruitful energies of the tree in the vicinity of the fruit, we think few will be hardy enough to doubt. It is on this principle that the vine-dresser proceeds, and he has not only the present in his eye, but the perfect maturation of those buds on which the *future year's* crop depends. In like manner, as steady growth, or one of an almost stationary character, tends to concentration, so a rapid growth tends to dispersion—such dispersion and concentration having a close bearing on the returning or elaborated sap. Thus if the problem were in a vine, how to grow a thick stem in a short period, every shoot should be trained in during the growing season; but if the finest fruit and a fruitful habit for the next year, *vice versa*. No. 5. Ripening the wood is, it may be con-

sidered, a consequence of the No. 4 proceeding, and is an all-important affair; indeed, so much so, in our estimation, that at the risk of being tedious, we have thus again gone over the old ground of *stopping*, &c.

The complaints of failure in our finer fruits this season, are loud and well-nigh universal. Some lay it to unusually late frosts, others to the prevalence of cold winds, and some to that indescribable thing—a blight. Some have seized this opportunity to turn the tables, as they conceive, against the protectionists, not of corn, but of blossoms. Some gentlemen whom we have chatted with on the subject, have waxed very cross indeed, declaring stoutly against protection of every kind, as being *against nature*! The latter argument is truly amusing. What can such gentlemen say to blanching a head of celery, taking a sea-side plant (sea-kale) from the cold bed, and putting it in a dung bed; striking boughs for shelter amongst gooseberry bushes, &c., &c. This we know, that we have protected more by double this spring than ever before, and never before had we such a vast profusion of hardy fruits; and as to wall-peaches and nectarines, nothing can possibly excel them at the present moment. This would not have been repeated, as it may appear an invidious and uninvited comparison; but it is necessary to the purpose in hand; and, moreover, THE COTTAGE GARDENER has been, in some degree, a champion of the blossom protection question. As to frosts, at the time the country was complaining of the untowardness of the spring, almost from the Land's End to Johnny Groats, we also experienced all sorts of weather but the right. Indeed, how the blossoms escaped, is still a matter of astonishment, much as we presumed on a thorough ripening of the wood of fruit-trees, a principle here made what bilious folks might term, a hard-riden-hobby. Now, all this circumlocution brings us to our text—the *ripening of the wood*; and this is the *very* time to urge that the last effort shall be made; it is now the eleventh hour as to man's interference. Let our country cousins say what they may, and be as cross as they like, they have never, in our opinion, fully appreciated this one fundamental principle. They have much to do yet; they need a clear light to travel by; and we trust that THE COTTAGE GARDENER will not prove an *ignis fatuus* in this respect; it has not been, hitherto, pointedly accused of being so. Still, shine the sun ever so brightly, he shines in vain, unless we open our eyes. Be assured good friends, then, that the question of covering and non-covering; of do this, and let alone that, all sink into comparative insignificance beside *the great question of wood ripening*. The neglect of this is productive of a variety of anomalies—hence bad setting, casting blossoms, a double amount of susceptibility to the late spring frosts, defects in the sexual character of the blossoms, imperfect development, premature casting of blossom, and such like. Such form a portion of the catalogue of evils which each returning spring presents; a pretty bill of fare truly, and mostly, we may add, "standing dishes."

We do not pretend to say that a timely attention to stopping, thinning, &c., will *alone* produce a perfect condition of wood, although a most powerful auxiliary. A proper condition of root-culture must be carried out in connexion with it; above all, avoiding very deep soils. Where soils are both deep and damp, it scarcely matters what the system pursued is, with regard to pruning, training, &c., after all the pains possible; the production of fruit will ever be on a precarious footing, if, indeed, a crop can ever be produced.

Let us now beg to call the special attention of the readers of this work to the *last stopping of this year*; one which will combine the results to be expected from Nos. 2, 4, 5, in particular, and which, indeed, will tend in no small degree to a further equalisation of the sap in

some trees, productive of symmetrical trees, and, by consequence, an equal and uniform distribution of the fruit. The *peach* and the *nectarine* may come in for the first operation, and the sooner the better. Our practice is, to pinch the point from every strong-growing shoot all over the tree, taking care, however, to leave unmolested every shoot below the proper medium. On the last point we lay particular stress, and the reasons for, and utility of the proceeding, will surely be manifest on the least consideration. No sooner are the stronger shoots stopped, say in the middle of August (and these will in general comprise two-thirds of the spray), than the influx of sap has a tendency into the weaker shoots, and these enjoy this advantage for at least three weeks longer; this tends to feed their hitherto half-supported buds, and to give them an impulse, in the succeeding spring, of eminent service in opposing any blight, and, as before observed, of equalising strength. The fruit, moreover, will be larger, and better flavoured, and the wood on such shoots will be by far better ripened, because ripened earlier. Let any one observe, at winter-pruning time, the difference in *texture* between shoots of this kind and those which have continued growing some three weeks or a month later; the pruning-knife is a pretty good criterion of ripeness in the wood.

The superior *pears* we would operate on next, and in a similar way; also the *apricots*. As for *plums*, *cherries*, and such-like hardy fruits, they require much less assistance this way. About vines and figs we will offer advice in our next.

Neither is stopping alone all that remains to be done, as to the ripening of the wood. Thinning-out, or shortening back any superfluous shoots which may have been missed at former operations, must be attended to; indeed, the maxim must be, to admit sunlight to all the embryo fruit-buds as far as possible, for this is the period in which their formation is actually completed, they are, in fact, in a position somewhat analogous to seeds or grain three parts ripe.

Let peach-growers remember, also, to remove the leaves from before their ripening fruit about a fortnight before they are ripe, pulling some entirely away, and pinching others half away. It is impossible to give them that fine colour for which a fine peach is so much admired without attention to this. R. ERRINGTON.

THE FLOWER-GARDEN.

THE summer of 1826 was drier and hotter than any we gardeners have had to put up with ever since. I was then but a young gardener, but I well recollect that in the neighbourhood of Inverness the leaves dropped off the pear-trees against walls for want of moisture, and I read in the newspapers that prayers were offered up in the churches for rain in the midst of the corn-harvest. That summer I had the charge of a border of fine and very expensive *Geraniums*, which were planted in the pots, and plunged an inch or two above the rims, on a border, in front of a conservatory which was attached to the mansion. What with the shelter of the mansion, and the glare from the conservatory lights, the border was as hot as any border could be out of Bengal itself. Here I then burnt my fingers so completely, but not from the heat of the border, that even now, when I think of the practice I was charged to carry out, it makes my hair almost stand on end; and the adage of the burnt child being afraid of the fire has been well illustrated in my case ever since, for whenever I hear of a proposal to plant out geraniums in pots, as on that memorable border, I shudder all over. I recollect, as well as if it was done but yesterday, that more pains were bestowed in blending the colours and shades of

those geraniums, at the time they were planted, than is done even now in some of our best gardens. When the whole was finished, and Mr. Temple, the gardener, was told that "Donald must look to them," I thought I could never have a longer feather in my cap; but very shortly it was all over with me, nothing but the "white feather" could I show. The more I watered the geraniums, and the more yellow leaves I picked off them, the more dry they became, and still more yellow did the rest turn out, till, at last, the case became so desperate that I really began to think of doing something that I dare not tell at this length of time. It was the fashion in those days to pot plants only once a-year, and the unfortunate geraniums were just eleven months in the same pots they were plunged out in; it was also the practice to have every pot nearly brimful of earth. This will explain how my efforts at watering them burnt my fingers, all the water passed into the border, and some of them passed somewhere else in a fortnight; and I pass on to say, that the next geraniums I plunged out in their pots are *now* doing remarkably well. They are a lot which were intended to come into use about the end of this month, but, on the third of last July, having had a large bed to fill, all in a hurry, after removing some scaffolding from it, they were put in, pots and all, and ever since this is the gayest bed about the place. No large leaves need be picked off them this season. However, the plan is too newly in hand to enable me, from my own experience, to recommend it with confidence; but I have the authority and the consent of the best flower-gardener in Scotland to say, that the plan, beyond a doubt, is a complete cure against too many leaves in the autumn; that at Drumlanrick thousands have been so treated with the greatest ease and most complete success; and there Mr. McIntosh finds that, after taking them up in their pots, and allowing them to get dryish, and cutting them down, they are much more easily kept all the winter than by any other method. In March he shakes all the soil from them, and repots them in fresh soil, and in the same pots; then he allows them to go on slowly in their own way until it is time to plant them out again, and still in their pots. The beds are well dug, and the pots well watered, and plunged one inch over the rim, and if very dry weather succeeds this planting, the whole get a watering or two—that is all. The climate in the south-west of Scotland is so moist in the autumn, aggravated at Drumlanrick by the hills all around, that without some such scheme as this they could do very little good with the stronger growing geraniums at all out of doors. Now, this is not being "convinced against the will," for I am well pleased to find out at last that I had been for so many years under a false impression, owing to my first experiment on the hot border having well nigh caused me to fly the country for ever. Another very great advantage of this system is, that in the autumn, when the beds get too crowded, some of the pots and plants may be removed, and, by giving them another shift, to secure all the roots that may have found their way over the top of the pots, the plants would be in a good condition to "rig out a greenhouse," as one of our foremen suggested the other day. The only novelty which I could show to Mr. McIntosh was the system of planting according to heights and colours which is adopted in the principal flower-gardens here, and on the value of which he put more stress than any gardener who called since I have been here. After seeing everything over and over again, I requested him to say candidly which of all our geraniums he thought the best, for the flower-garden, of course. After the *Golden Chain*, he remarked, which is far beyond anything I have yet seen tried, your next best is so-and-so, and fortunately the so-and-so happened to be a seedling without a name, and I asked him on the spot if he would "father it," the meaning of which

in England is, if he would name it, and become the sponsor, to which he readily consented, and suggested for a name—*The Hon. Lady Middleton*, if her ladyship would make no objection; and, as luck would have it, we met her ladyship on one of the terraces along with a large party of ladies, to whom the whole story was told, and the naming of this seedling was soon over, Mr. McIntosh being the sponsor; and as I crossed the seedling four years before, that part of the ceremony had not to be repeated. After consenting to this incident being told to THE COTTAGE GARDENER, we both parted, under the conviction that as long as two geraniums are cultivated in England for the flower-garden, *Lady Middleton* will be one of them. The colour comes in between *Cherry Cheek* and *Judy*, or the light shade of what the French call *ponceau*; the next nearest to it in colour is *Princess Alice*; but for beds and boxes, or pots and baskets, it is far beyond all the shaded ones; and that it may get about freely, and true to name, I shall ask Sir William Middleton's permission to send cuttings of it to Mr. Appleby and other nurserymen. Many visitors had cuttings of it last year without a name.

White Geraniums.—Out of a large batch of seedlings which have just flowered here, there are eleven plants of the scarlet breed, with flowers as white as snow, and yet they are not worth a farthing a-piece. Those who believe in the doctrine, that a long course of good cultivation will so change the nature of a wild plant, as that at the end of a given period it will produce a better kind than itself from seeds, cannot reconcile that doctrine with this real fact, in the case of the White Horse-shoe geranium which produced these seedlings. It has been in cultivation upwards of thirty years, without receiving a particle of that mysterious power, and three times thirty years of good culture would very probably find it just as it is now proved to be.

Enough about seedlings to-day; let us rather make the best of what we already know to be good and useful. The *new bed*, which I suggested in the spring, of equal numbers of *Cuphea strigilosa*, and *Zauschneria*, is a marked improvement on either of them by itself. At a little distance the red of the *Zauschneria* gives a great deal more richness and consequence, if I may use the term, to the flowers of the *Cuphea*, so much so, that the bed has been mistaken already for that of a new *Cuphea*, and without looking very closely, no one can tell that there are two kinds of plants in the bed—the growth and flowering of the two plants being so much alike. Here, then, is a bed any one may have without an inch of glass. If you put a layer of pea-sticks all over this bed, and over that three or four inches deep of old leaves, or any litter, the *Cuphea* will be safe from frost. It stands out without the least protection in a mild winter, and seedlings from self-sown, will come up in abundance. Those who keep bees should have a large bed of the *Cuphea* on purpose for them; they will leave white clover or heather bloom any day for a taste of the *Cuphea*.

The most exotic bed one can have, is the *Agapanthus*, and *Gladiolus psittacina*, planted thick, and this requires no aid from glass. Those who have only seen the *Agapanthus* in pots, can form little idea of the improvement which a rich bed and a few seasons' growth give it.

The little yellow *Oenothera vivipara* or *prostrata*, struck from cuttings at the beginning of May, is now a sheet of blossom with me. It is used in imitation of a yellow ribbon wound round a set of beds. The ribbon is ten inches wide, and perhaps a hundred yards long. There is another ribbon for tying round the same beds, but in another direction; it is a light blue one, made up of the *Lobelia erinus grandiflora*, in four varieties. This is an original composition by the Hon. Lady Middleton, and tried this season for the first time, and they all say it is exquisitely beautiful. These *Lobelias*, and the

Oenothera, may also be had without the aid of a pane of glass. A slight covering will save the *Oenothera*, and the *Lobelias* come early enough from seed sown on an open border at the end of April. That was the way we raised some thousands of them this season for this blue or shaded blue ribbon, although we have glass enough.

What a charming ribbon could be made in the spring with *Crocuses*, and so could a set of chains, for that was, and is now, the form given to these band-like stripes of beds, in most places. But chain patterns of flower-beds are getting out of date, owing, I suppose, to their sameness, and a more elegant is being introduced in scroll-work, where fancy designs suit best, or are better liked. In a very few years we shall have all the colours for a flower-garden in plants hardy enough to pass the winter without glass altogether, and with very slight protection in winter. *Dahlias* would of themselves furnish all the colours except the blue, but we have only three or four kinds yet really fit for a flower-bed. Anything above two feet high on the richest ground, and all the buffish muddling colours of the florists, are unfitted for distinct beds of *Dahlias*, and fortunately the form of a flower of any kind never enters the head of a real flower-gardener; purity of colour, whatever the colour may be, is the first and prime requisite in a flower-garden plant; the power to withstand the sun and rain being the second essential point, and a good habit of growth cannot be dispensed with. If we get those three essentials combined, anything else is a mere splitting of straws. I must keep these points on the carpet, and alive, too, now that the florists are aggressive, for if they once get a footing in the flower-garden they will drive all the ladies out of it; and I should like to hear who would care much about a flower-garden after that. We have it now, in our own pages, and on the best authority, too, that colour is the last point insisted on for a new flower by these crazy people; and we are really in very great danger, because they have the run of raising seedlings among themselves; so that a seedling with all the good qualities for a flower-bed, has no chance in their hands, if it comes up in their own pots, away with it they will as soon as they get the first look at it; and if you send them a bright scarlet, or a pure white *Dahlia* that will not grow up above eighteen inches high, no matter how desirable such a novelty would be to thousands, the florists would pooh, pooh, it out of the country, and, may be, out of cultivation too. Talk about the Cardinal, indeed, it is nothing to this kind of innovation on our rights and privileges, and on our colours and shades. But we must battle them.

D. BEATON.

GREENHOUSE AND WINDOW GARDENING.

ACACIA.—I am not insensible to the charms of novelty, but neither am I blind to the interest connected with plants that are useful, though it may be they are chiefly seen among old-fashioned people, who can love the beautiful *because* it is beautiful. Towards many such, getting discarded from unique collections, I experience sensations akin to those which I feel when thinking of other days, and of friends still dear to me, though seldom seen. The heading of this article has been suggested by a lady remarking, the other day, her surprise that country gardeners did not grow the yellow acacias more, as she was quite delighted, in the early part of summer, in noticing the beautiful, small, flowering-plants in vendors' baskets in the streets of London. Another reason for referring to them is, that they can be easily and quickly grown, and thus may soon be made to ornament a greenhouse, until others of slower

growth can be reared to supply their place, when the possessor's taste becomes more fastidious. From the impetus that the Crystal Palace *will* give to the building of glass houses, I hope yet to live long enough to witness *groves* of these, and many more Australasian plants, planted out in the soil, and room afforded for the display of their natural proportions; not by coddling them with tropical heat and moisture in our dark and cold days in winter, as some of our *learned* critics say we *must* do, in order to show their vast cleverness in *knocking down* a practice which nothing but their own wisdom would ever have thought of setting up, but by giving them, the plants I mean, merely as much artificial heat as would keep them and their visitors from the pelting storm, and a few degrees safe from the freezing point. Many of the species of this genus are so strong-growing, and so graceful from their beautiful pinnated foliage, as to lay no mean claim to central places in such a Palace. But, keeping more at present to the limits within our reach, I shall select a few out of the many that are well worthy of being cultivated in pots; merely remarking that the plants will not suffer in winter in a temperature of from 35° to 45°, more especially if the wood has been hardened by a fair portion of sunshine, and a diminished supply of water, the previous autumn.

With one or two exceptions the whole of the hardy kinds of *Acacia* are fitted for a cool greenhouse, or those narrow houses in front of walls, covered with glass in winter, and removed in summer, which one day will be anything but scarce. With few exceptions the colour of the flowers is yellow, and these flowers again are arranged into single globular heads, or again along the branch in the way of a raceme, or a cylindrical spike. The great proportion of those fitted for pot-culture have a tough, leathery-like foliage,—in fact, it is not foliage at all, though answering the same purpose, but an enlargement of the petiole of the leaf,—into what, in many cases, looks like a leaf,—and hence is termed a *Phylloid*. This is even deemed by botanists the true term for the pinnæ in the beautiful pinnated species of the genus. In all the group, true leaves are formed when raising them from seed, but as growth progresses, they drop, and the phylloid takes their place.

The first I mention is as remarkable as any in this respect, as all the younger parts of the shoots may be considered as so many phylloids: I allude to *A. alata*. Before mentioning a few more worthy of particular attention, I may allude to the surmise, that as the leaves of all the family are *persistent* and evergreen, and become in general very much dried before they drop, the plants, so far as they themselves are concerned, cannot derive a great amount of nourishment from decomposing vegetable matter, at all proportionate to what deciduous trees in our climate do from the decomposition of their *own* foliage. Rather poor soil would thus seem to be pointed out as most suitable for the growth of the *Acaciads*; and, certainly, so far as their culture in pots is concerned, they seem to thrive best when no organic matter of decomposed animal origin comes into contact with them. But, on the other hand, such very hungry, sandy soil as they are found in, most frequently, in New Holland, would not be quite suitable in our limited pot-room, for we neither could give the roots the same space to traverse, nor command the same clear sunlight, which enables them to decompose and assimilate what the roots may absorb from great distances, nor yet those continuous rains which, to a great extent, make up for the long droughts to which such plants, in a state of nature, are liable. Natural localities and circumstances must ever be studied for giving us first principles of treatment; these acquired, we must modify them to suit *our* circumstances. For instance, we *rest* many plants in our winters as the best make-shift; where we

to imitate nature *exactly*, we would often give the rest in the driest and hottest period of our summer; and some things cannot be coaxed out of this, but *will* have it, to flourish and bloom freely.

Acacia alata.—A winged-stemmed species, with dilated leaf stalks, and a spine at the points, and single flowers profusely placed at the angles of these stalks. A most interesting plant, blooming freely when eighteen inches high, and continuing to do so, as a large specimen, some six to ten feet in height. Flowers freely from February to July.

A. juniperina (Juniper-like).—A plant with small-pointed phylloids, flowers coming principally from their axils, and produced rather freely but singly, growing from three to ten feet in height, and flowering generally from March to June.

A. urticifolia and *verticillata* are synonymes of this, or so much alike, that they may be considered such for all practical purposes.

A. taxifolia (Yew-leaved).—A neat plant, with small leathery-like leaves, or phylloids, and producing flowers freely, growing from three to six feet in height. *Ensifolia*, and *undulæfolia*, flower about the same time, from March to July, and with the slight variation in the foliage, as the names indicate, there being little other difference; all of these flower freely, when from one-and-a-half to six feet in height.

A. armata.—So called from each phylloid, or leaf, being armed with spines at its base. One of the most beautiful and useful of the group, from the intense rich green of its foliage, and the golden, orange colour of its flowers, produced from the base of almost every leaf, and flowering freely when a foot or 18 inches high, as it continues to do when a bush of some 10 feet in height, and five to six feet in diameter. It constitutes a good sale plant in London when about 18 inches in height. It flowers generally from January to June, and yields, thus, its showy blossoms at a period when flowers are most required. If the young wood is early ripened in summer, so as to set the flower-buds, with or without a slight forcing, it will bloom during the whole of the winter months. In cold greenhouses, constructed upon the lean-to principle, where the covering of the back walls becomes a matter of importance, I can safely recommend this plant as one well fitted for such a situation, provided it is not too closely pruned, but enough of young shoots procured to stand out a little from the tree; these, if well ripened in summer, will be masses of golden-orange in the following spring, relieved by the dark foliage as a background. In summer and winter, when not in bloom, few things could be more agreeable than the beautiful deep green of the plant. As a proof of its fitness for such a place, where no great artificial heat was given, I may mention, that in warm situations, both in England and Scotland, it has frequently passed a winter unscathed, against a wall, with but slight protection.

A. decipiens (Deceiving).—With leaves as if the points were bitten off. A dwarf plant, flowering when from one to five feet in height.

A. diffusa (Spreading) and *prostrata* (Lying down).—Both, seemingly, synonymes of each other, with small linear phylloids, and of rather a drooping, trailing habit. From one to three feet in height, and producing its globe-like flowers rather freely.

A. stricta (Upright growing).—With longish phylloids, and much broader than the last, and flowering very freely. May be managed successfully in a pot; it is from 15 inches to six feet in height. Beyond the larger size indicated it is difficult to keep any of the sorts mentioned in good healthy flowering condition in pots; to have them healthy and larger they should be planted out.

A. falcata (Sickle-leaved).—A good deal similar to *ensifolia*, mentioned above.

A. myrtifolia (Myrtle-leaved).—A beautiful little plant, with somewhat myrtle-like leaves, and the flowers produced in little racemes at the point, and along the sides of the young shoots. Plant from two to four feet in height, and having pale yellow flowers from January to June.

A. suaveolens (Sweet-scented).—One similar in mode of growth and the producing of the flowers, but phylloids small and linear, and the plant growing from two to six feet in height, the blooms having a very pleasant aroma, and appearing generally from January to June.

A. verticillata (Whorled).—This is different from the synonyme referred to above, and altogether is much stronger growing, though the phylloids are narrow, small, and linear; but under these circumstances is easily known by the yellow flowers being produced not singly but in *cylindrical spikes*. There are several varieties of this species, differing chiefly in the size of the foliage. In a pot it grows from two to eight feet in height, and flowers from February to June.

A. pulchella (Handsome).—Is a pretty little thing, with pinnated phylloids and solitary flowers, growing to a height of from a foot and a half to five feet, and flowering during the spring months.

A. grandis (Grand).—One of the most beautiful and *newest* of the group, possessing beautiful, soft, sea-green, pinnated foliage, and great abundance of bright orange globular flowers, coming on single peduncles from the base of the phylloids, whence, also, a single spine issues from the stem as a discriminating distinction. I have seen it flowering freely when about three feet in height, and it does not look as if it ever would be a rampant grower, and, therefore, it is well fitted for small green-houses, as it seems to flower not only in spring but through the summer. It has been in the country four or five years, and will no doubt soon be plentiful. Were I restricted to grow three in pots, they would be *alata*, *armata*, and *grandis*.

Propagation.—This is best done by seeds when obtainable, and before sowing in a hotbed in spring they should be steeped in water of 140° for 24 hours. Next, by cuttings of the half-ripened young shoots, in the beginning of summer, inserted in sand, under a bell-glass, and placed in a cold pit for several weeks, and merely shaded from the sun, and moist enough, then they may be removed to a little bottom-heat until the roots are freely protruded, when they will require to be potted off and kept close until rooting; shortly afterwards nip out the point of the shoot, to prevent elongation, and encourage growth of a stubby, bushy character.

Soil.—Sandy loam and fibry peat. If likely to grow too strong and long give more loam, this will make them more robust and sturdy.

Culture.—The first season from cuttings or seeds they will be best under glass. In the second summer they may stand until October, from the end of May, in a sheltered place out of doors, where they will have the morning and evening sun, be secure from worms getting into the pots, and be saved from deluging rains and very boisterous winds.

Watering.—This will generally be required in fair abundance, especially when growing, and opening the first flower-buds. We cannot imitate their natural climate, but towards autumn we should give no more water than will just keep them from flagging. At these two periods a little manure-water may also be given.

Repotting.—So long as the plants are young they will require this at least once a-year. When established, and as large as you wish them to be, the repotting should merely consist in getting rid of some of the old roots and a portion of the old soil along with them, and replacing with fresh in a similar sized pot. After such operations give the plant a shady place for a time. The

periods best for performing the operation are just when fresh growth is proceeding, after flowering and pruning, in the beginning of summer, or early in autumn, when the summer's growth is all but finished. In old plants, however, top-dressing annually, and a little manure-water at the times stated, will keep the plants healthy for years.

Insects.—Green-fly, and spider, and thrip, all come at times, but they are comparatively harmless when contrasted with a *white scale* (*Aspidiotus nerii*), which is almost sure to attack the plants, especially when they become old. The best remedy for this is washing the plants with gum-water, and, in a few days, syringing it off with water at 140°; or, if you did not mind the appearance, immersing the plant in a thin clay puddle until every part was covered, and allowing it to remain to dry on for a couple of days, and then rubbing it off between your hands, or with a hair broom, and then using the syringe to clear away all impurities. You will find ample directions for paints, and compositions, and smearings for ridding plants of insects, requiring much time in concocting them, and no trifling good *siller* at the druggists; but anything that will *just* prevent the *pests* getting a puff of fresh air, will be about as valuable an antidote as any other thing, however costly.

R. FISH.

HOTHOUSE DEPARTMENT.

EXOTIC ORCHIDACEÆ.

PLANTS THAT THRIVE WELL IN POTS—(Continued from page 293).

PESOMERIA TETRAGONA (Square-stalked P.); Mauritius. —This is a curious plant, with a considerable share of beauty. The plants grow about a foot high, are square stemmed, and the flowers are produced out of the axils of the leaves near the top of the stems. The colour is a yellowish, bronzy green; the lip has a few faint spots of crimson. They are interesting from a curious circumstance that takes place during the action of blooming. The name, *Pesomeria*, is derived from two Greek words, *pipto*, to fall; and *meros*, a part. Directly the flower opens the sepals drop off or fall, the petals and lip remaining to constitute the flower, which then lasts a considerable time in bloom. Rather scarce. 42s.

Culture.—Requires the India-house, or warmest part of the orchid-house, where there is but one.

Soil.—The fibrous part of turfy loam, chopped sphagnum, and rough pieces of turfy peat, in equal parts, with a small admixture of broken potsherds and small pieces of charcoal, will grow them well.

Potting.—The best season is when the young shoots begin to appear at the base of the square stalks. Fill the pots nearly half full of drainage; then place a thin layer of moss, and upon that a sufficient quantity of the compost, to leave room for the roots to be spread over the surface within the pot. Keep the roots, in all cases, as near the surface, when the potting is finished, as possible. As the shoots are heavy and rather high, it is necessary, when new potted, to tie them securely to green sticks, one to each. Arrange the stems so as to spread them at equal distances from each other.

Water.—Like all other orchids this plant is benefited by a season of rest and a season of growth, but not in the highest degree. Water must be given most freely during the season of growth, and in smaller quantities, and at longer intervals when at rest. Never entirely withhold water, because this plant has persistent leaves, and thick succulent stalks or pseudo-bulbs, and, in consequence, will not bear without injury extreme drought for any length of time.

PHAIUS ALBUS (White); Nepaul.—A plant of a handsome habit, and free flowerer. Sepals and petals pure

white; the lip is the same colour, with distinct regular lines diagonally across it of a beautiful purple colour; the flowers are of a medium size, and are produced on short racemes from the apex of the stems of the same year's growth. The leaves are of a lovely sea-green colour, and are about four inches long. When the plant is in bloom, the light, elegant stem, beautiful leaves, and lovely white, modest-looking flowers, render it exceedingly attractive. 42s.

P. BICOLOR (Two-coloured); Ceylon.—Sepals and petals deep maroon; lip, white and rose. A handsome free-growing species, with large plaited foliage, and obscure pseudo-bulbs. 31s. 6d.

P. GRANDIFOLIUS (Large-leaved); China.—This is synonymous with the well-known *Bletia Tankervilleæ*, originally named, also, *Limodorum Tankervilleæ*. Sepals and petals white outside, reddish-brown inside; lip projecting, shaped like a sugar-shovel, white at its base, and beautifully tinged with deep rose towards the open part. Though common, it is a very fine, desirable species. 7s. 6d.

P. MACULATUS (Spotted-leaved); Nepaul.—Flowers large, and of a rich yellow colour. The flower-stem rises from the base of the year-old pseudo-bulbs. When the plant is strong and healthy the flower-stem will rise to the height of two feet, and produce ten or twelve fine flowers. Each pseudo-bulb has four or five leaves upon it; they are large, and spotted with white; hence its specific name. The pseudo-bulbs are large, oblong, and of a deep dark-green. It is altogether a very desirable plant. 31s. 6d.

P. NIVEUS (Snow-white); E. Indies.—Flowers pure white. This is, we opine, only a variety of *P. albus*, the only difference being that the lip of *P. niveus* is, like the rest of the flower, of a pure white, whereas, in the species, it is striped with purple. In every other part, stems, mode of flowering, shape of the flower, size and colour of leaf, it is exactly the same pattern as *P. albus*. It is, however, rather more scarce. 52s. 6d.

P. WALLICHII (Dr. Wallich's); Khoseea Hills.—Sepals and petals bronzy yellow outside, bright clear orange inside; the lip is also orange towards its base, and richly stained with pink at the extremity. They are produced on stout, tall stems, frequently from four to five feet high, bearing, at the extremity, a spike of ten or twelve flowers, opening in succession, and measuring, when fully expanded, five inches across. The leaves are truly noble, handsome objects, from three to four feet long, and six inches wide at the broadest part; they first spring from the pseudo-bulb quite upright, then gradually and gracefully bend downwards. There are three or four to each bulb of these fine leaves, and they spread out so as to form a circle, from the midst of which appears the noble flower-stem rising majestically above the fine foliage, giving the plant a grandeur of appearance really striking and attractive. At Ealing Park, the villa residence of Mrs. Lawrence, we once saw this species of *Phaius* in perfection. The pseudo-bulbs had been divided, from time to time, and each division had made its shoot; they were not separate, but allowed to form one plant, and were potted accordingly. At the time when we saw it there were no less than eleven flower-stems, each bearing four or five flowers expanded at once. These, together with the numerous noble palm-like leaves, rendered it one of the finest objects of the orchid tribe we ever witnessed. *Culture of Phaius at the earliest opportunity.* T. APPLEBY.

FLORISTS' FLOWERS.

MR. GLENNY ON FLORISTS' FLOWERS.

DR. FRAMPTON DAHLIA.—This is another model of the right sort, approaching very closely to the perfection

of the flower. It has all the good qualities of *Princess Radzville*, and none of the faults. As we have only seen the bloom sent to us, we ought not, if there were a possibility of doubt, to be positive as to its quality. It is perfectly round on the outline, forms two-thirds of a ball, symmetrical beyond any, has a beautiful centre, is very double, cups very prettily, is medium size as we saw it, and its very make speaks for its certainty. We are obliged to the raiser for giving us the first sight, but we bespeak first-class certificates for it everywhere. It was shown by the side of *The King of Dahlias*, and beats it, because it does not reflex, or rather, if it can be said to reflex in the lower petals, it is trifling. Mr. Rawlings, of Mile End, is the raiser, and is proving it at Newington. We expect to see it at all the shows in the metropolis.

We have had seven *Dahlias* from different persons, of which we need only take a general notice. A flower, which is not round in the outline, is not, in the present advanced state of the dahlia, to be tolerated. *M.'s Yellow* has the fault in a large degree, and the centre, though solid, is sunk too much; it is not so good as *Mrs. Seldon*. *J.'s Lilac* is beaten altogether by *Fearless*, *Admiral*, *Duke of Cambridge*, and others; it is of no use even proving it. *K.'s White*, so called, is very pure as we see it; but we are tired of adjudicating on whites. We are quite sure there is no dependence, without it is seen, on the plant. Every dahlia grower recollects *Barmaid* last year; it was shown a very good white. We have bloomed it this year, a very beautiful edged flower, and the scale, so conspicuous on the centre last year, was totally absent. If we had covered it from the light, perhaps it would have been white, but we never cover. But *K.'s White* is pink under the petals, and is not so good, even in the specimen, as a good *Antagonist*. *S. N.'s seedling*, 1851, *Fancy*, is not so good as many of the red-and-white varieties we have already. The others cannot be worth growing; we should dig them up to give others room. A seedling, with the petals purple inside and white at the back, received last, is curious; but no dahlia that shows the backs of the petals can be good for anything. The seedling in question may be grown as curious, because the great contrast between white and purple gives it a fancy appearance.

BOX OF SEEDLING PANSIES from *Bromley*.—Of no use whatever. We wish the raisers would read the "Properties of Flowers," before they waste their money on carriage of things not even approaching to good. There is not a clear field of white or yellow among them; and we have repeatedly said, that if the eye runs into the border, a flower is useless. It will be a good thing when Societies decide that a stand with such a flower on it shall not win a prize.

PHLOXES (*W. P.*).—We do not see anything new or particularly good among them. Mr. Salter sent out a dozen better last year. There is no novelty in the colour; of the habit we know only what *W. P.* tells us, nor do we know what he calls "a fine habit."

PHLOX DRUMMONDII (*R.*).—Good colour and form; and if all that were worse than those sent were destroyed directly, or these kept by themselves, the seed will be good.

BALSAMS.—Single blooms. Very good, but not so large as we saw in a seed-shop window, some of which were three inches across, and double to the centre. The cream or straw-coloured variety was extensively sold out in the spring.

GERANIUM, BEAUTY OF KENT (Fancy).—A very beautiful colour, well adapted for bedding; bright crimson and white, well marked in the under petals, and of full fancy size.

FLORISTS' FLOWERS CULTURE.

CHRYSANTHEMUMS.—Our greenhouses would be sadly deficient of bloom in the autumnal months if this tribe of plants were unknown, or not cultivated. When they are properly grown and well-bloomed, there are few families of plants that can surpass them in beauty; and yet they are, comparatively speaking, either thought so little of, or so mismanaged, that they are not valued as they deserve. We trust, now that there are so many improved varieties with well-formed flowers and clear bright colours, that they will become as fashionable as the *Pelargonium*, or any other tribe of florists' flowers. This result would be more certain to follow, if encouragement to cultivate the chrysanthemum were more liberally given, by having exhibitions of it when in bloom. There are Tulip Societies, *Pelargonium* Societies, &c., &c., and we know no reason why there should not be a "Chrysanthemum Society." There are one or two Chrysanthemum Shows near London, but they are not enough; the large provincial towns should take this fine flower into protection and fosterage, and have exhibitions of it, and thus raise a spirit of emulation amongst the cultivators that would, in a very few years, bring this flower to a higher standard of perfection, both in quality of bloom and skill displayed in cultivation.

At this time of the year the chrysanthemums will have attained a considerable size, and should have their last potting. As they are such free growing plants, they require a proportionate amount of strong food to enable them to produce fine, bold, highly-coloured flowers. The ordinary soil, or compost, is composed of good loam and well-decomposed dung, in the proportion of two parts of the former and one of the latter. We have, when we desired to obtain extraordinary specimens, used the following:—We procured from a rich meadow or pasture, some green turf about two or three inches thick, this was taken home and chopped up pretty small; then there was added about one-third of two years old cow-dung, and a small quantity of sand. The plants, having been properly attended to, were bushy and strong; they were turned out of their pots, and put into 11-inch pots, in this rich soil. They quickly showed that they were at home, by growing with a vigour perfectly astonishing, compared with those cultivated in the ordinary way. This growth was kept up by liberal supplies of water, both at the root and overhead. They were never allowed to flag, but at the same time care was taken that there was no stagnant water in the pots. Though a gross feeder, this plant is not an aquatic. In potting it, then, attention must be given that there is proper drainage, so that the superfluous water may find a ready escape. When the plants have nearly filled their pots with roots, it will be desirable to give them a further stimulant by watering with liquid manure. This must neither be too strong, nor too often applied. Water twice with clear soft water, and once with liquid manure water. The plants should be placed in such a position as to allow to each a due share of light. To keep them steady, it is advisable to plunge the pots about half their depth in coal-ashes, or even soil or gravel. The best position to arrange them in is a single row, with a foot of space between each plant; the common way of huddling them together in some by-corner is bad both in principle and taste, and the usual results are the consequence—long drawn up plants with a few starved flowers at the top. Healthy, blooming, bushy plants, can only be produced by a regular course of preparation and culture, and there need not be any hiding of the plants when well managed; a young, healthy, thriving set of plants, are always pleasing objects, even when not in bloom. It is only ill-managed, scrubby, long-legged, unsightly plants, that need to be set behind some hedge or wall, or any other obscure

place, to hide bad culture and its effects. We never see plants in such places without a considerable amount of mental torture. They remind one of the back slums of large populous cities, where the poor inhabitants are sickly, pallid, and dirty, and present an appearance too frequently disgusting. So with plants; if they are placed in analogous circumstances, the same results will be the certain consequence. Let, then, every plant have a position likely to keep it in health and constant supervision.

Chrysanthemums will require a certain amount of care in training so as to form handsome bushes. Short sticks must be thrust into the pots, and a certain number of branches selected to tie to them; these should neither be too many or too few. It is difficult to give precise instructions on this point; let it suffice to state that each shoot, and all its leaves, should stand clear of its neighbours, so as to let every leaf have light. If one stick only is thrust into the pot, and the branches are tied to it in the bundle-fashion, the consequence will be, all the inside leaves will, for want of light, soon turn yellow, drop off, and so spoil the appearance of the plants. Let the shoots, then, be judiciously thinned out, and those that are left be trained outwards in part, so as to allow a due admission of light and air to the centre leaves and shoots.

Insects will be troublesome, especially in long-continued dry weather; the green-fly especially. Whilst the plants are in the open air it will be difficult to apply tobacco smoke; the next best remedy is tobacco water. This may either be procured from the manufactory, or made by steeping tobacco in water, squeezing it occasionally to extract the juice. Dilute it with water again when used. The way to apply it, where the number of plants is large, is with the syringe; but where there are not many plants, have the diluted water in a wide shallow vessel, and bend the tops of the shoots down, so as to dip them into the juice; this will destroy all that it comes in contact with.

T. APPLEBY.

(To be continued.)

THE KITCHEN-GARDEN.

ROUTINE WORK.—Persevere in thorough cleanliness and order; keep up a loose open surface about every crop; clean alleys, walks, and edgings, and allow no weed to appear, or slug to brood. Continue to plant *Cabbage* and *Coleworts* pretty freely, and, also, *Savoy*s, at close distances, say a foot apart, for winter and spring greens. The *Celery* season being now fully in, plenty of water, if dry weather prevails, should be applied to this wholesome vegetable, and a late crop planted out some time this month; a few plants of a good variety should also be selected and planted for seed. The tops of Summer *Onions* should now be bent down, and an autumn sowing of these, and also of *Horn Carrots*, should be made on a warm border.

Cucumbers should now be sown for autumn produce; the linings of late planted out *Cucumbers* and *Melons* should be occasionally tossed up; and, as the nights get colder, a little covering should be applied.

Mushroom beds should now be made, and materials collected for making beds of a good substance for winter crops. Well-made stable dung, that is to say, well saturated with urine and a good portion of droppings, with a sufficient quantity of good holding loam intermixed, to prevent any strong burning heat; it does not matter how strong or fresh the stable dung is for making mushroom beds, the principle to keep in mind is, that a moderate, uniform, kindly heat and moisture is required, and the strength of the dung must never be allowed to steam and evaporate away. *Bullock*, *sheep*, and *deer droppings*, are all very good materials for mixing with

stable dung and loam, provided all is well incorporated together, and enough of good holding loam applied to modify and secure the necessary heat and moisture. In preparing a bed, we shake out the very largest of the straw from the stable dung, take in all our materials, if the bed is to be made in a house or shed, well incorporate them, and tread or ram all firmly together in forming the shape of the bed. In about six or eight days, if the bed is made of all fresh materials, we find it requires turning, and if considered a little too warm, more loam is added; it is then again firmly trodden or rammed together; and in about six or eight days after, is generally in a fine condition for spawning. The spawn is broken into small pieces, about the size of a common-sized hen's egg, and is placed in the bed, about one foot apart, and just covered under the surface. If the materials are considered too moist to suit the spawn, a

little handful of dry mulchy dung is wrapped about each piece of spawn, previous to its being placed in the bed. By taking such precautions, the spawn will generally run very kindly, and, in due time, produce a fine crop of firm short-stemmed mushrooms. We case with good fresh loam, too, about the thickness of two or three inches, made very firm; after being cased about a fortnight, it is again beaten over with the back of a spade. When the mushrooms begin to show, the surface is watered all over from a water-pot with a moderately fine rose, or with boiling water, which will moisten the surface, kill and destroy the insect pests and their larvæ, and create a warmth and humidity in which the mushroom delights. The proper warmth for mushroom culture should be from 55° to 60°, which will produce them good, both in quantity and quality.

JAMES BARNES.

MISCELLANEOUS INFORMATION.

OUR VILLAGERS.

By the Authoress of "My Flowers," &c.

LESSONS of infinite value are taught us by the poor. If young people were early accustomed to give time and attention to the wants and sufferings of their humble neighbours, they would receive a double blessing; for they would learn how many luxuries, and even comforts might be done without; and it would make them, under the severest bodily afflictions, grateful for every alleviation, and thankfully contented when means are wanting to procure them.

A sick-room, under every aspect, speaks to us with a voice that will be heard. Where luxuries surround a holy mind in suffering—there we hear it; where they attend one who cares not from whence they come—there we hear it too; but there is a word of peculiar power uttered by the bed-side of languishing poverty.

Mary Williams inhabits two little rooms at the back of a baker's shop. The whole tenement, which is very old and crazy, is her own for life; but to support herself and her child, she has let it many years, retaining only space enough to turn round in, and hardly to exist. She is a kind, affectionate-hearted creature, and was a devoted attendant upon a sister who lately died beneath her roof, and whose patience under lingering sickness was very great. Nancy C—— was the wife of a man who was transported in consequence of the riots in 1830. She never heard of or from him since he quitted his home; but she lived in respectability and industry as long as her health lasted, and did her utmost, with the help of her friends, to support her two little boys. Gradually her health declined, and poverty, of course, increased. Her sister Mary took her into her little close kitchen, and waited upon her with unwearying kindness. She struggled to "keep about" as long as possible; and sat by the cold, miserable fire-place, when affluence would have been propped with pillows; but death stole closer and closer, and at length she could not climb the ladder that led to her sleeping room. She took quietly to her bed, and lay there, calmly and contentedly, for many months. The old broken ladder was placed in a recess, where stairs were meant to have been. On reaching the top, the visitor stepped upon a ledge, and crept along a low place formed by the sloping roof, at the end of which was a square hole in the wall, just large enough to admit those who could double themselves up in a small compass, and stoop down to the ground. This opening admitted them into a small, but clean room, the floor of which was considerably lower than the way into it. On a very clean little bed in a corner, lay the emaciated form of poor Nancy, sometimes sadly oppressed with the heat and closeness of the room, but always thankful and uncomplaining. Very few persons knew she was ill, and not more than one or two could possibly get to her, so difficult and awkward was the way. The wonder was how she had crawled up and down so long. There she lay for months, with a cheerful mind,

but an exhausted frame, gradually weakening away, with nothing to support or refresh her but that which occasionally came from those who had little to give. A cup of tasteless tea, and a bit of bread and butter, or of coarse, heavy pudding, was the only food her poor, kind-hearted sister could supply; yet a murmur never escaped her lips, and, I believe, never arose in her heart. She appeared to desire nothing but that which it pleased God to provide; and the sight of such contented *nothingness*, appealed loudly to the hearts of those who stood beside her. How often are we led to complain, with a thousand blessings around us! How often do we find fault with the good things set before us, and fancy we are very unfortunate because something is not quite nice, or our taste covets that which we cannot obtain!

A few visits among England's cottage homes, beautiful and interesting as they often are, would be of inexpressible advantage to us. We should learn to blush at our own ungrateful waywardness under trial, at the multiplied wants and wishes we give way to, and the deadness of our hearts to the many blessings and alleviations that others do not possess, and yet are satisfied. When we see the fevered hand stretched out for the cup of water, or pale, weak tea, without sugar or milk to make it palatable, or the few half-ripe currants that a neighbour may have had to give, or the sour, bitter orange that is almost dried up from the closeness of the room, we should look back to our own comforts when we are sick, to the trouble we give to all around us, to the many delicacies placed before us, and, probably—*most* probably—our discontent and impatience with them all. We should learn how few things are necessary, how many things we might do without, in what numberless ways we might spare the anxious hearts and weary feet of our kind attendants, and yet enjoy such blessings as thousands languish for in vain. We should learn, too, a little consideration for the poor.

I have frequently heard the sick cottager condemned for fanciful tastes and ingratitude, when his failing appetite has turned from the daily gift of gruel, or his weakened stomach from the broth which would, in earlier days, have nourished and delighted him; and I have heard these observations made by persons who, in sickness, possessed every comfort, and every change of food the sickly palate longed for. If we *considered* all we see and feel, it would be better for ourselves, as well as for others. We should bear with much more ease our own afflictions, and we should minister with more discretion, perhaps, or, at least, more feeling, to the wants of others. It would tend, too, to teach us that which He who was "a man of sorrows, and acquainted with grief," laid down so forcibly for our instruction—"but one thing is needful." Oh! if we possessed that *one thing*, all other things might be withheld, but we should not miss them. We might be stretched, as many are, on the bed of suffering,

but "the everlasting arms" would be beneath us. Our parched and fevered lips might covet in vain the cooling draught, but our spiritual thirst would be slaked at the well of "living water;" we should be rejoicing in "wine and milk," that earthly money cannot buy, and feeding on the "hidden manna" that nourishes and refreshes more than all the rich and delicate food that can be set before us.

Let us sometimes take a lesson from the poor. Let the sick-bed of Nancy C— reprove and improve us. When we are tempted to murmur and repine at the cup placed in our hands by Wisdom and Love, let us go out among "the highways and hedges," into the cottage and the hut, to the poor and sick, and we may, by God's blessing upon our reflections, return to our comfortable homes wiser and better men.

CURRANTS—GOOSEBERRIES—RASPBERRIES— THE CRYSTAL PALACE.

Now I am "I th' vein" (and the majority of my countrymen and women in bed and asleep), I will detail one or two little contrivances that I have been working upon this season,—such as protecting and training my currants, gooseberries, and raspberries.

I do not, however, pretend to say that these things have not been done before, suffice it in me to affirm I never saw or heard of any like them, or did any one that I have come in contact with, therefore, if the ideas are not new, they are not generally known; which to all holders of *small* gardens infested with birds they ought to be, or some other contrivances which may be better.

I am a great lover of birds, I like to see and hear them about me, though not one particle of fruit would they leave me here if I did not look strictly after it upon the netting principle.

Training Currants.—In my small garden, 46 yards long by 30 broad, I dare only allow myself seven currant bushes, two of white, and five red; with a few temporary ones against the wall, merely to occupy the space till the young fruit-trees fill it up. These seven currant bushes are planted on the fruit-border (if Mr. Errington reads this he will say it is wrong, but I crave his patience): they stand, as it were, in the angle of a triangle, between each fruit-tree; so that they do not shade or rob the roots of the trees in any degree to be injurious. The branches of the bushes proceed from one short main stem, and when trained, as I shall presently show, appear like an inverted cone. Procure two forked stakes three feet long, drive them into the ground six inches, one on each side the bush, then fasten a wooden hoop two feet three inches diameter horizontally upon them, and fasten the branches *within* side the hoop equi-distant around with zinc wire. (If I were called upon to subscribe to a memorial for the men who invented zinc wire and blotting paper, I would certainly do so.)

Current Protectors.—Procure four stakes one inch in diameter, and four feet long: and two strong wooden hoops, three feet diameter; nail the stakes equi-distant firmly to the hoops, allowing one hoop to be six inches within the *bottom* of the stakes, and the other even with their tops. Now fasten eight smaller rods between the four rods, and even with the top and bottom hoop; place the machine topsy-turvy, and slightly drive some tin-tacks four inches apart all round the edge of the hoop; return the machine to its first position, and in a similar manner drive some tacks round the upper edge of the top hoop; lay the construction on its side, and drive some tacks four inches apart the whole distance between the hoops on one of the four stoutest stakes, or now, more properly speaking, supports; from this extension motion again come to the first position, and see how completely you can fasten a net round and over the top, through the agency of the tin-tacks. Sharpen the four six-inch legs, and the thing is complete.

Can you fancy anything more to the purpose, or much cheaper than this for placing over, remaining firm, and thoroughly protecting the fruit from damp and the feathered tribe: or, as a lady expressed to me the other day, "from the fingers of the bipeds also."

Last, and by no means the least, the foliage, by this contrivance, is preserved fresh and green. Everybody knows

how soon the leaves turn yellow if the trees are matted up, and everybody knows, or at least should know, that if this is the case they cannot expect a good crop of fruit the following season; and as regards the look of the thing, behold the bright red fruit and the dark green foliage—and contrast a tree matted up as if it was in the last stage of consumption. These netted machines will be of immense service in the spring to pop over the bushes when frosts, as well as birds, prevail.

Gooseberry Training.—I had been worrying myself many months about my gooseberry bushes; I wanted to train them as espaliers, but I was obliged to halt in this opinion, for the tremendous broadsides we get here in the shape of wind, is something a storm at sea might envy. At the moment I now write, the wind is cracking its cheeks over my Horticultural productions in style; and I fear bent on mischief. I have everything, however, on the post-and-rail principle, so I can in a great measure defy it.

A very famous gooseberry cultivator in this town, trains his bushes on the table-trellis system; but the enormous quantity of hooks, crooks, stakes, and props, that he brings into play in order to effect it, frightened me completely, and I was on the eve of letting my bushes grow in their natural way, which, with the large sorts now in vogue, means sprawling on the ground; but Mr. Errington, in an article on trellises some time ago, brushed up the idea again, and I think I have mastered myself.

Take two forked stakes one foot six inches long, drive them into the ground six inches, one on each side the bush; then fasten a wooden hoop two feet three inches diameter horizontally upon them. Attach the branches of the bushes to the upper edge of the hoop with zinc wire, placing them similar to the spokes of a wheel.

This is really a very simple proceeding, and I do not think I should have mentioned it here, were it not that most people who see the plan pronounce it something that they never saw before, and approve of it mightily. The bushes certainly have a very compact appearance; and I must say, that until I see a better system, I shall continue to train them in this manner. As to the fruit, it hangs suspended in the safest way possible, not a splash can reach, not a thorn can prick them; and this is saying a great deal. I wish I was in a similarly safe position.

My gooseberry bushes are planted in a parallel row alongside the garden walk, the width of border I allow for them is four feet. I intend to net them in exactly the same manner that I do the strawberry (barring the faggots, *See page 278*), and using two nets instead of one, to hang down each side. The same nets that are on the strawberries will always be done with in time, and be at liberty for the gooseberries just as they begin to ripen, and again in the spring when frosts and birds prevail.

I train my *Raspberries* along a single rail: this is much better, I think, than tying them to stakes, they have more freedom: and this fruit, like our own country, flourishes better in such a state than some other nations of Europe which I could mention. Raspberries are difficult to net, at least so far as expense is concerned; but the thing could be done easily enough by making a temporary frame-work sufficiently high to walk under, and straining a net entirely over it. I think it was Mr. Errington who mentioned two pieces of glass as a scarecrow, and finding that as fast as my raspberries began to ripen the other day, they disappeared immediately, I procured three tapering rods eight feet long, $\frac{3}{4}$ -inch diameter at their base, placed them slanting and firm in the soil between my canes, fastened two pieces of string three feet long to their tops, about an inch apart; made fast two pieces of glass to the ends of the string, and the result is, that not a bird has shewn its beak amongst my raspberries since. How long this state of things will continue remains to be seen; birds soon get accustomed to scarecrows.

Apropos of glass,—not one pane of the Great Exhibition must be removed, unless it is for the purpose of ventilation. Perhaps "a cottage gardener" may be allowed to express an idea upon this subject, and if so, I for one, instead of voting to remove the Crystal Palace, would vote for the centre aisles to be arched over similar to the transept; then it would be a glorious thing. We should have a centre and two side transepts to contain all that is beautiful and rare in

vegetable nature. The four side aisles should be converted into forcing departments, where all fruits, and exotic plants from the four quarters of the globe should be seen under cultivation. It should be called "THE GARDEN OF THE WORLD."

UPWARDS AND ONWARDS.

ARTIFICIAL SWARMS.

I GIVE you my mode of artificial swarming, as it is quite as effectual, and more simple, than that one adopted by "The Country Curate." As soon as drones make their appearance, you may commence as follows:—Take an empty hive, reverse it on the ground in front of the stock to be operated upon, then gently lift the stock on to the reversed hive, and with a cloth of some kind make the union secure between the two hives. Then reverse both hives, so that the stock is at bottom, with its mouth uppermost. Now commence rapping the lower part of the stock, until you have got a sufficient quantity of bees into the upper hive, which will be in about ten minutes. You may ascertain when the queen is going upwards, by a general and peculiar humming noise that they make. When the operator thinks the queen and a good quantity of bees have gone up, untie the cloth, and place one a yard to the right, and the other a yard to the left of the place where the stock originally stood. If you have not got the queen with the swarm into the new hive, the bees will presently go back. I took an artificial swarm on the 19th June, and I think, as near as I can guess by the feel, that it does not weigh less than three stone, gross weight; but the hive was full of empty comb when I took the swarm, which of course would be to their advantage.—HENRY TAYLOR, *Newland, near Hull.*

FORM OF PANES FOR GLASS STRUCTURES.

THE ancients had their ages of gold, and of brass, and of iron; truly, ours seems likely to be the age of glass; any hint, therefore, upon the use of that material is useful. A neighbour of mine, in erecting a greenhouse, has cut the overlapping pieces of glass not straight at the end, but very slightly angular, thus. The consequence is, that the rain has a tendency to run down the centre of each pane below it, instead of against the framework, which preserves both wood and putty. Of course, heavy rain will run where it likes, but the draining off of rain, and lingering dew or drizzle, will always take the point of the angle, which operates as a spout. It is no more expense or trouble to cut than a straight line, hence its worthiness for trial. I never saw it before, but it may not be a new idea.—A WORCESTERSHIRE MAN.

ROCKWORK.

IN your number for January, in a very interesting article on earthen banks as ornaments instead of eyesores, your correspondent shows, unintentionally, the two reasons why so many fail in adding this beautiful contrast to a garden. He says: "The best rockwork I ever saw was in the Surrey Gardens, it was an imitation of the Rock and Castle of Edinburgh." Now, what can strike any reflecting mind as more absurd than the attempt to imitate such an object on such a minute scale. Rockwork is only an attempt to bring on one small rock all the beautiful plants nature scatters over a large space, and to get the *greatest amount of that* contrast between the bright green, and varied flowers, and the rough and rugged rock, which we call picturesque beauty. Therefore, instead of imitating a mountain, or even a large mass of rock, the best rockwork will always be found where a small piece is imitated. If there is a command of water, a lovelier scene than a small hollow with one bend in it, one side steep and jagged, the other more sloping and regular, the path made of flat, rough-edged stones, with the water running alongside, and sometimes over the path, cannot well be seen on a small scale even in nature. *Wherever* rocks are imitated *part must* be built with mortar, and *all* the rest either built with wide steps cut in a bank, or with dry stones and earth.—A CONSTANT READER.

HATCHING BEE-BROOD.

"The Country Curate," in reply to H. T., says, in vol. vi., page 246—"A fortnight after the issue of the prime swarm, or a little later, it will generally be found that *most* of the brood left by the old queen has been hatched out, while few, if any, eggs will have been laid by the new one. Let the bees then be forced out, and joined to the hive *which stands nearest to it.*" As I consider this rather important to bee-keepers, I beg to give you extracts from my Bee Diary in support of its correctness.—June 8th (this year), drove a swarm from No. 2 hive to No. 3, Taylor's Bar-hive; weight of bees, 3½ lbs. June 30th, 4 P.M., drove the bees out of No. 2 into a spare hive, and put it on No. 2 stand until 7 P.M., when I spread a cloth on the ground, front of No. 4, in which I had put a cast, on the 24th of June, of 1½ lb., threw No. 2 bees suddenly on the cloth, and placed No. 4 gently over them, resting it on bricks. The bees had all ascended into No. 4 by 9 P.M., when I replaced No. 4 on its own stand. On examining No. 2 hive combs, as I cut them out separately, I found only four bees, one of which came out while the comb lay on the dish, and *no brood.* This was twenty-two days after I had driven the swarm in: taking twenty-two days as my guide, I allowed seven days for my having driven the swarm that number of days before its natural time; reckoning thus, my time and the Country Curate's agree to a day, as being the most likely time to transfer bees from an old hive to a new one, or to strengthen an old stock, cast, or swarm, without any serious loss to the proprietor of either bees or brood.

I have been induced to write this in consequence of two old bee-keeping friends having said I should sacrifice many bees if I disturbed the old hive before autumn; and, believing their opinion to be that of many other bee-keepers, I have offered my practice in support of the "Country Curate's" opinion, to the contrary.—J. NEWLAND, *Albion Cottage, Whetstone.*

TO CORRESPONDENTS.

SOLANUM MACRANTHUM (T. M. W.).—As you have failed to strike cuttings of this plant, try the following method at once:—Clear away the soil from the collar of the plant till you come to some roots about the size of the little finger; cut them close to the tree, or main root, and then leave them, with only a slight covering of earth over them, or no earth if they stand high enough; and the chances are, that a shoot or two will begin to grow out from the top of the cut part in a short time; but the end of the spring is the best time for this. Every one of the *Solanums* come from cuttings put in in April: you made your cuttings, probably, from soft, rank wood, whereas very small side-shoots do best.

WINTER FLOWERS IN 48-POTS (G. M.).—The whole race of forcing bulbs will suit you better than anything in that sized pot. Begin with the double Roman Narcissus and Van Thol Tulips, and follow with Hyacinths, and all the rest which you will see in our former lists.

TRANSPLANTING THE DEODAR (S. C.).—We have very little experience in removing large Deodar Cedars, but, judging from the Cedar of Lebanon, you may let yours (now 12 feet high) stand ten years longer; and when you do remove it, let it be done in September, early or late, according to the weather: rainy or cloudy weather is best. You will, of course, prepare the roots two years before you transplant. The blossoms on your Manx Codlin will not produce useful fruit now.

PRICE OF HONEY (Bees).—The honey dealers in London are Neighbour and Son, Holborn; Fortnum and Mason, Piccadilly; Marriott, 74, Gracechurch-street, and Milton. Honey in the combs will fetch from 1s. to 1s. 6d. per pound, according to quality. Run honey is scarcely saleable in London. Your 12 or 14 pounds afforded by storing is very little; but this has been a bad season.

PARIS NURSERYMEN (Subscriber).—We cannot say much for the Paris nurseries. Each person cultivates but one or two things, combined with market gardening. The best are—*M. Vilmorin* for fancy annuals, nicknacks, and gay plants; *M. Noisette* for roses and fruit-trees; *M. Chauviere*, 104, Rue de la Roquette, for collections of plants. Market morning is the best time to see their plants—there are so many small cultivators who bring their produce to market.

PROPAGATING DOUBLE SWEET-BRIAR (Amicus).—Nothing is more easy or simple than to gratify your friends, who so much admire your beautiful double sweet-briar, and who wish for a plant of it. Tell them plainly you cannot be at the trouble of getting up plants for them, but they may have a bud or two each, and welcome; and it will come from buds as well as any other rose. If any of these friends are at a long distance, cut a shoot with a few buds on, then cut off the leaves, and fold the shoot in a piece of cabbage leaf, keeping the under side of the leaf next the shoot, and send it in a little tin box through the post. Buds of roses, and of all other trees, thus managed, will go quite easily from any part of England, Ireland, or Scotland, to any other part in these kingdoms, and be quite fit to work next day.

SAGO FRUIT PUDDING.—S. S. says:—"Being forbidden the use of pastry, I use rice and sago as substitutes in the following manner.—Boil a teacupful of sago as thick as it can be made to boil without burning; put about five tablespoonfuls in the bottom of a quart basin; then a layer of baked fruit of any sort (sweetened), and fill the basin to the

brim with alternate layers of fruit and sago. Put it in a cool place for some little time, and it will become solid. It is best when made shortly after breakfast, and allowed to stand till wanted to warm either in an oven, over boiling water, or before the fire with a plate turned over it, for dinner. The sago boils best when soaked in cold water for a few hours before using; rice is used in exactly the same way. By way of change, I sometimes line a basin with the rice or sago, when very thick, and spread a thick layer of the same over a large dinner plate. When cold and stiff, I turn the basin over it, and with a knife cut the sago round the edge of the basin; the parings I put in the bottom of the basin, and then fill with baked fruit, after which I put the sago in the plate on the top of the basin, to act as a cover. The smooth side must be upwards. Eaten with mock cream, made as follows, it is delicious:—Pour half a pint of boiling milk on a teaspoonful of arrowroot, well mixed with a small quantity of the same; stir the mixture well, and have the white of an egg well beaten, and when about half cold add it, and, placing the whole over the fire, stir till it nearly boils, then strain for use."

LETTUCES (*A Lover of Salads*).—If you grow the *Paris White Cos*, employ a very rich, cool soil, and give abundance of water, your lettuces will form good hearts. We saw a bed of this variety a few days since, growing near the side of a river, many of which weighed three pounds, and some four pounds.

ENTOMOLOGY (*E. P.*).—No insect came with your letter; nor do we profess to give the names of insects not connected with gardening.

CABBAGEWORTS (*D. A. B.*).—Your *Walcheren Brocoli* producing small flowers on separate spikes, must have been from cross-impregnated seed, which will happen sometimes to the most careful seedsmen. Were we in your place, we should plough up the thin *Lucerne*, and re-sow it on the better soil now occupied by your wheat. It will not thrive anywhere unless kept very clean by repeated hoeings.

PALE FUCHSIA.—*M. W.* says:—"For the information of your correspondent, *Devonian*, I beg to state that I have a *Fuchsia*, *Sir Henry Pottinger*, I think, is its name, which I doubt not in the delicious climate of the south of Devon, would soon rival *Coralina*. In my conservatory, in the comparatively cold climate of Hampstead, it is covered with flowers (I have often counted thirty in a bunch), and makes very long shoots."

HEDYCHUM FLAVUM IN OPEN AIR.—A correspondent, *Mr. E. Parfitt*, says:—"Being shown a plant of the *Hedychium flavum*, growing by the side of a pond at Parker's Well House, near Exeter, I thought it rather remarkable, as it has stood planted out where it is now, these two last winters, without protection, and at the same time, it is a plant cultivated in our stoves. I have one now coming into flower in my stove. The plant out-doors of course does not grow so fast as they do in-doors, but this one is about three feet in height, this season's growth, and I think, if we get a fine autumn, it may flower. There was a plant of the *Date Palm*, *Phoenix dactylifera*, planted out the same time as the *Hedychium*, but it was killed the first winter."

ERRORS.—At page 281, col. 2, line 18, for "breaking," read "beating;" line 40, for "1s. 3d." read "one-third;" and at page 282, col. 1, line 46, for "premiere," read "premier," and for "conte," read "coute."

HELIOTROPE LEAVES TURNING BLACK (*T. P. L.*).—We cannot tell the cause of this, without knowing where the plant is placed. Probably the air is too dry. Directions for making a *hotbed of leaves* will be found at page 307 of our last volume. No hotbed will retain its heat unless five feet long, three feet wide, and of the same depth.

MARBLE STAINED (*J. W. B.*).—Most probably a little muriatic acid will remove the stain of dirty water from your mantelpiece. Wash off the acid immediately the stain has been acted upon.

GOLDEN CHAIN GERANIUM (*Pelarg.*).—You never will grow this variety in your rich garden border. Plant it in a mixture of one-third peat, one-third sand, and one-third of soft brick-bats, broken into very small pieces, and you will not complain of its not growing true and healthy.

FUCHSIA BED (*J. B. A.*).—You ask for six fuchsias to plant round *Coralina* in a circular bed, 8 ft. 6 in. diameter. For whites, plant *On-in-the-Ring*, *Beauty Supreme* (Kendal's), *Elegans* (Turvil's), or *Cus-sandra*. For reds, *Globosa major*, *Eximia*, and *Shylock*, or *Lord Nelson*. The distance to be two feet or thirty inches from the centre one, and two feet apart from each other; but after three years, they must be removed farther apart. Or, else, plant duplicates now, to be taken out when the others grow strong enough to fill the bed. The standard roses you wish to plant between the fuchsias must be of the strongest hybrid perpetuals, to be able to keep up with the fuchsias; their stems not to be under a yard high, and let them be placed between *Coralina* and the others.

GERMAN PLANTS (*Ystrad*).—We presume you mean the miniature plants, now getting rather common, much on the same principle that "the Celestials" admire stumps for feet in their ladies, only, in our opinion, much more interesting. Your object is to keep them healthy, and yet prevent them growing larger, and you want to know how often you must water them, and if any should be allowed to remain in the saucers. This, you will perceive, must be regulated on principles of watering, not seldom referred to. If in exposed situations, and the pots unplunged, they may require water several times a-day when it is very hot, and perhaps, only once a-week, when it is dull and cool. In the former case, a little may be allowed to stand in the saucer with propriety. Any light sandy soil, such as peat and loam, or a handful such as you can obtain at the roadsides, may be used for filling up the pots, where it has been spilled or sunk. Farther than keeping the plants healthy, you must be moderate in watering, and everything else. Frequent sprinklings of water over the foliage will be better than deluging at the roots. The subject may again be referred to.

PORTABLE GREENHOUSE (*An Old Subscriber*).—We are sorry that your communication has been mislaid, but you would find most of what you wanted in answers to correspondents, and in an article by *Mr. Fish* lately. You can get up but a small greenhouse for £40, unless, like the builder of "the £5 greenhouse," you can do the most of the work, or, at least, superintend it yourself. We can only give general advice; a brick-layer or a carpenter would be the best to consult. A span-roofed house, facing east and west, would answer your purpose best, as you only want

to keep plants in winter chiefly, and then you might have vines up both sloping sides of the roof. To be portable it is best to make definite arrangements with the ground landlord, and then the house should be made in pieces, *Crystal Palace* fashion. Flint glass would increase the expense, but would look better. As a hibernatory for plants in the cold months, front lights might be dispensed with, if the side walls are not above four feet in height. If easily procured these may be of brick, but the cheapest plan, where wood could be got plentiful and cheap, would be to have a concrete foundation, from six inches to a foot above the ground level, on this have home-grown timber logs, three or four inches in thickness, as the basis of your superstructure; make the side walls of feather-edged boarding; a stoutish beam at the top of this, and one in the centre, fastened there with two pieces at each end, would be all the strong wood you would require; as cross-rafters might be altogether dispensed with by using bars of home-grown timber, at least two inches and a half in width, and at a distance of 15 or 18 inches from each other, having the glass cut to that width, but about half as much in length; in fact, putting the long part of the square of glass across, instead of lengthwise. Then all the glass would be fixed, only the roof might be in several pieces for packing. A flap-board in several pieces should be fixed all the length of the apex of the roof, for giving air; and similar conveniences can be made in the side walls, whether of brick or wood. If feather-edged, any crevice could be stuffed with moss, and if that should not be neat enough, a double wall could easily be formed, and the space filled with sawdust. Such a house would require £6 or £7 to heat it with hot-water. A flue would be cheaper. A short flue, combined with the *Pol-maise* principle, would be cheapest of all. For the purpose wanted, there would be no necessity for the finest glass. Suitable enough, we presume, might be obtained at first cost, from 2d. to 3d. per foot. We do not know if we could advise any more economical mode of going to work. If anything more is wanted, we will be happy to attend to it; but expense is a thing that is always regulated by local considerations.

CANDLE PLANT.—*T. M. W.* suggests that this is the *Kleinia articulata*, by which we suppose our correspondent means *Cacalia articulata*, known in some places as "the Roman Candle Plant." It is a succulent, native of the Cape of Good Hope. Our correspondent wishes to know the botanical name of "The Rambling Sailor;" can he send us a specimen?

EIGHT FRUIT TREES (*Jane B.*).—*Apples* (Dessert). *Pitmanston Nonpareil*, and *Sturmer Pippin*. (Kitchen.) *Northern Greening*, and *Hawthornden*. *Pears*. *Beurré Diel*, and *Jargonelle*. *Plums*. *Smith's Orleans*, and *Golden Drop*. If you refer to page 317 of our fifth volume, you will find full lists and particulars to enable you to choose for yourself. In your cold clayey soil, on no account plant in any other way than on stations, if you wish to escape canker and blight.

DISEASED MELON LEAVES (*H. W.*).—Without knowing your soil, temperatures, or treatment, how can you expect us to give an opinion as to the cause of vegetable disease? We can only guess that you have not kept the air of the frame moist and warm enough; but the same disorganization might be produced by other causes.

PEACH, NECTARINE, AND APRICOT-TREES NEGLECTED (*Clapham*).—Train in the branches without the loss of a day, removing all that are fore-right and superfluous. You may get the wood ripened enough to be productive next year.

HERACLEUM GIGANTEUM (*Rev. J. S. L.*).—A single specimen on your lawn would not look well, its growth is too stiff and coarse, but it would look very well in front of any group of shrubs.

OUR VOLUMES (*J. Betsworth*).—Our volumes begin with the first Thursday in *October* and *April*, so you can reckon for yourself. The present volume, of course, extends from the beginning of *April* to the end of *September*.

GREENGAGE (*Harriett*).—There is no variety superior to the old one. The best early *Strawberry* is *Keen's Seedling*. Graft your seedling apple-tree when as thick as your little finger.

ROSE LEAVES MILDEWED (*Grasmere*).—They will not be so affected if you mulch over the roots of the rose-trees, and keep them well watered in dry weather.

FLORISTS' VERBENAS (*Langley*).—There is no better way of preserving the first opened flowers of a *Verbena* till the whole opens, than keeping them dry.

UNITING SWARMS (*M.*).—For fourpence you can have our No. 35, which contains an account of effecting this, too long for extraction.

SALVIAS (*C. R. R.*).—*Salvia chamædrioides* is the only blue *Salvia* for a bed, after *Patens*, but quite of a different habit, being a sort of a trailing plant, and is best trained down low on the ground, and then the flowering branches allowed to rise. It drops the flowers as much as *Patens*. There is only one white *Campanula carpatica*, and it is as white as virgin snow. It lasts from the end of June to the end of September, unless the season and situation is too dry for it, when it is off by the middle of September, or earlier.

ROSES (*M. Fermanagh*).—In a bed four-and-a-half feet wide, plant a row of dwarf standards, four feet apart, along the centre, and a row of dwarf or bush roses on either side of it, also at four feet apart. Plant them at the beginning of November. Half-standards are from 30 to 36 inches high in the stems; the dwarf ones may be budded on six-inch stocks, or on their own roots; plant none in this select-bed but autumn-flowerers. You may put in lots of the best *Pansies* between the *Roses*, *Bulbs*, and, indeed, any low plant that does not suck the ground much. *Bed of Greenhouse Plants*.—There are five thousand greenhouse plants, and at least fifty ways of managing them in beds.

ACHIMENES (*Ibid.*).—Unless you have the seeds by you, we would not recommend you to sow seeds of *Achimenes* at all. One root, two inches long, broken into small scales, and put in like seeds, will make a great number of plants, that will flower the same season. March is the best time to sow seeds of them. You would lose the whole if you were to sow in the autumn.

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WEEKLY CALENDAR.

M	W	D	AUGUST 28—SEPT. 3, 1851.	WEATHER NEAR LONDON IN 1850.				Sun	Sun	Moon	Moon's	Clock	Day of
				Barometer.	Thermo.	Wind.	Rain in In.						
28	Th			30.114—30.064	67—40	N.	—	7 a. 5	55 a. 6	8 4	2	1 11	240
29	F		St. JOHN BAPTIST beheaded.	30.153—30.141	67—32	W.	—	9	53	8 29	3	0 54	241
30	S		Great Fritillary Moth seen.	30.253—30.221	68—33	N.	—	10	51	8 52	4	0 36	242
31	SUN		11 SUNDAY AFTER TRINITY.	30.300—30.292	62—42	W.	—	12	49	9 17	5	0 18	243
1	M		Clouded Buff Moth seen.	30.348—30.333	72—46	N.W.	01	14	47	9 47	6	0 0	244
2	Tu		Berberries ripe.	30.385—30.292	72—41	W.	—	15	45	10 21	7	0 19	245
3	W		Meadow Saffron flowers.	30.238—30.190	64—51	S.W.	—	17	42	11 0	8	0 38	246

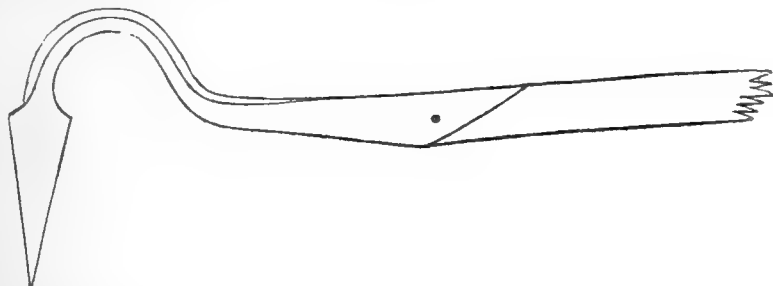
In the time of James and Charles the First, there was a very close alliance between the two great Yorkshire families of Fairfax and Bellasis. Sir Henry Bellasis had married Ursula, sister of the first Lord Fairfax of Cameron, and the union led to the employment of the same retainers and co-operation, not only in the culture of the agricultural parts of their estates, but to emulation in gardening, and in planting. A father and son were then in their employment; Richard Lawson, the son, being steward and agent for Lord Fairfax, and WILLIAM LAWSON having long acted in the same capacity for Sir Henry Bellasis. Of Richard we have no record, and all that we know concerning him, is one letter published in the *Fairfax Correspondence*, dated in the November of 1731, "From the Rose and Crown in Gray's-inn-lane." It contains a report of the progress made in some family business, and concludes with the Court news. "The Queen (Henrietta Maria) was delivered on Thursday last; God hath sent her a daughter. There was great rejoicing in the city, and bonfires made in every street. Her Majesty lies-in at St. James's, which was the cause of my Lord of Danby removing to Cornbury." The Princess, whose birth was thus gratulated, was Mary, afterwards the wife of the Prince of Orange, and the best friend of her family during their exile. Wm. Lawson, the father, was the author of *A New Orchard and Garden; or, the best way for planting, grafting, and to make any ground good for a rich Orchard, particularly in the North parts of England. With the Country housewife's garden for herbs of common use, and also The Husbandry of Bees, &c., all grounded on the principles of art, and precepts of experience, being the labours of 48 years.* The edition dated 1618, the only one we have seen, is dedicated to Sir Henry Bellasis, whom he praises as a patron of gardening, and of "delightful skill in matters of this kind." The practice was now more and more firmly established of publishing such works only on the culture of plants as were the results of experience, and that now before us bears internal evidence of the truth of the author's statement. "I show a plain and sure way of planting, which I have found good, by 48 years' and more experience in the north of England." We shall not quote any of the rules or practices he recommends, but we will quote, for the admonition of young practitioners, his opinion of the superior influence and duty devolving on the gardener. "A gardener," he says, "must be honest, for honesty in a gardener

will grace your garden, and all your house, and help to stay unbridled servingmen, giving offence to none, not calling your name in question by dishonest acts, not infecting your family by evil counsel or example, for there is no plague so infectious as popery and knavery; he will not purloin your profit, nor hinder your pleasures. He had not need be an idle or lazy lubber; there will ever be something to do. Weeds are always growing. The great mother of all living creatures—the earth, is full of seed in her bowels, and any stirring gives them heat of sun, and being laid near day they grow."

Many editions of this work have been published, and in 1648, it was printed at the end of Markham's *Way to get Wealth*. One edition was published in 1623, and it had, as an Appendix, *A most profitable new Treatise, from approved experience of the Art of propagating plants.* The author of this, but then dead, was SIMON HARWARD, who, like Lawson, strongly recommends raising new kinds of fruit by sowing kernels, and saving only "the likeliest plants." "Simon Harward," says Anthony Wood, "whose native place is to me as yet unknown, became one of the chaplains of New College, Oxford, in 1577, was incorporated Bachelor of Arts the same year, as he had stood elsewhere, but in what University or Academy, it appears not. Afterwards he proceeded in Arts as a member of the said College, left the University soon after, and became a preacher at Warrington, in Lancashire. Thence he removed to Bansted, in Surrey, about the latter end of Queen Elizabeth, and thence, having a rambling head, to Tanridge, in the same county, where I find him, in 1604, to be a schoolmaster, and, as it seems, a practitioner in physic." After giving a list of his published works, embracing subjects in divinity, science, and physic, his biographer adds—"What other things our author hath written, I cannot yet find; nor do I know how to trace him to his grave, because he died not at Tanridge, as a worthy knight of that town, Sir W. Hayward, hath informed me, but removed thence to another place, which I think was Blechingly."

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-four years, the average highest and lowest temperatures of these days are 71.2° and 49.8° respectively. The greatest heat, 85°, occurred on the 1st in 1843, and the lowest cold, 38°, on the 30th in 1838. During the period 96 days were fine, and on 72 rain fell.

If, in conjunction with the three implements described at page 250, any of our readers procure the *Vernon Hoe*, described and figured below, he will possess all that he can require for garden culture, except the small narrow-bladed hoes necessary for thinning and loosening the soil between his drilled seedlings. The following is from a correspondent who subscribes himself A. M.



"Above I give you a drawing of an implement I find exceedingly useful, called the *Vernon Hoe*. As a scarifier, I cannot conceive a more useful implement, as it will penetrate the soil to the depth of six, or even eight inches, and is suitable for all kinds of soil. I use it constantly amongst the flower-borders and seed crops in drills; for the former it is far preferable to the small one-handed fork. It is made in three sizes, the smallest is 4½ inches in the blade in length, and one inch in width at the widest part, tapering to a point. It is admirably suited for ladies' use, as it will penetrate even very heavy land without much exertion, and is not liable to disturb plants by working too near their roots."

BEFORE resuming the publication of our reporter's remarks relative to the horticultural implements and tools

in the Great Exhibition, we think it but equitable to insert the following communications received by us, relative to *Alsop's Sulphurator and Fumigator*, noticed at page 299. By inserting them, we beg to state that we express no opinion as to the claims of originality—that must be decided by a tribunal that has authority to decide between litigants, after hearing the evidence on

both sides. Neither our reporter nor ourselves profess to do more than criticize the machines and tools as we find them in the Crystal Pavilion.

Mr. Brown, the proprietor of the well-known Fumigator, says:—

"Your correspondent, for whom you claim credit on the score of honesty and soundness of judgment, in reporting upon the horticultural implements and tools in the Crystal Palace, cannot be aware that the portion of *Alsop's Sulphurator*, which relates to fumigating, is a piracy on Brown's patent; and he may not also be aware, that any person found using or vending that instrument, as exhibited, will be proceeded against by the Patentee's attorney for the infringement, and that Mr. Alsop has been cautioned to this effect."

Mr. G. Fry, gardener to Mrs. Dent, Manor House, Lee, Kent, also writes as follows:—

"Permit me to state, with reference to the *Sulphurator* and *Fumigator*, exhibited in class 9, 25 A., in the Great Exhibition, and noticed by you in your leading article of last week, page 299, that I am the *bona fide* inventor, which I am prepared to prove; Mr. Alsop having been employed in the first instance, to manufacture them for me: As it would be, perhaps, occupying too much of your valuable space, I

abstain entering into details; more may be known subsequently, as I have referred the transaction to the proper authorities. I merely call your attention to the fact. I have made some very important improvements since I changed the manufacturer."

123 B.—JONES' PORTABLE HAND GARDEN ENGINE.

The construction of this engine is the same as a common engine, without the barrel or tube, and so, consequently, can be carried in the hand, and placed in a tub at any place it may be required. The cylinder, which is so contrived that it forms an air vessel, is fixed to an upright bar of iron, with a rest or handle at the top, while the lower end is pointed; also to this is hinged the handle, by which the piston of the pump is worked; the pipe is fixed to the lower end of the cylinder. In working this engine the left hand is placed on the rest at the top of the bar of iron, to steady the engine, while the handle is worked with the right hand, consequently it requires another man or boy to hold the pipe; however, this is a useful engine for a small place, as it can so easily be removed and taken among flowers, where it might be difficult and inconvenient to take a larger wheeled-engine. There are other portable engines made, quite as good as this. By a different arrangement the pipe is fixed on the top of a longer cylinder, so that the operator can steady the engine, and direct the pipe with one hand, while he works it with the other.

WE are indebted to our apiarian friend, J. H. Payne, Esq., of Bury St. Edmund's, for the following particulars of the greatest improvement in Pea-growing of which we have ever heard: that is, supposing it effects all that is stated, and that it will, we have the united testimony of Mr. Payne and Mr. Last. Mr. Payne's communication is this:—

"The twelve or fifteen rows of peas that I mentioned to you as being all sown on the same day, and coming in at stated periods between Midsummer and Michaelmas, at the will of the gardener, and, indeed, through November (weather permitting), were sown early in April; the peas were put in six inches apart, by which five-sixths, if not more, of the seed is saved. The distance between the rows is something more than is generally allowed. The kinds were—*The Champion*, *Thurston's Reliance*, *Knight's Green Marrow*, and such-like. The sticking was done at the usual time, but the sticks require to be very strong, and to extend considerably more than is usual on each side of the centre of the row. Now, when the peas are *two* feet high (and herein lies the merit of the discovery), they are stopped, and when three clear joints are made after stopping, they are stopped again, and the stopping is repeated as soon as three joints are made after each previous stopping, until such time as the peas are wished to come into bearing. Now, by this method, the produce is increased at least *four-fold*, and not more than five-sixths of the usual amount of seed used; the trouble as well as the risk of late sowing being also avoided. The person who kindly showed me this method, is Mr. James Last, gardener to R. Bevan, Esq., Ivy House, Bury St. Edmund's, to whom the credit of it alone is due, for it is entirely his own discovery; and at his request I make you this communication. It must be remembered that each row is to be occasionally looked over, and every blossom (for there will be, here and there, one make its appearance) pulled off, until they are wished to be productive. I should have made you this communication yesterday, but I wished to read it to Mr. Last before sending it, that its correctness may be insured; and yesterday being by no means inviting for a walk, prevented my seeing him. I have again seen the peas, and must say the abundance of the crop is scarcely

to be credited by those who have not seen it. Mr. Last says he could now gather *three* sacks of peas, and I have not the least doubt of the correctness of his statement. Some of the rows are six feet through—hence the necessity of sticking "broad," as he terms it."

GARDENING GOSSIP.

THE *Seedlings* worth notice at the *Surrey Zoological Gardens* consisted of the *Dahlia*, *Dr. Frampton*, which had a first-class certificate, and is unquestionably deserving it; and a fancy *Dahlia*, called *Laura Lavington*, a dull fawn-colour, tipped with white, not first-rate in form, but a very different colour to what we have at present. The folly of having but one kind of certificate to give was exemplified in this, the first *Dahlia* being all one could wish, and the latter having but the one solitary quality of novelty, and yet both had the same distinction, one being worth a hundred of the other. Of *Hollyhocks* there were also two deserving peculiar notice; one, *Watford Surprise*, a most delicate white, with purple at the base of the petals; and flower close, double, and very rich. This had a first-class certificate. *King of Roses*, another variety, we have already noticed; this, also, had a first-class certificate: but there was a third which deserved one and did not have it. *The Duke of Wellington* is a mottled variety, beating everything we have of anything near its colour, which is a rich mulberry on a pale ground, and the mottlery is very fine. Of the new *Dahlias* of last year, *Bar Maid* was the most beautiful in several stands; but instead of being white, as shown last year, it was splendidly edged with rose, and a very pretty model of a flower. It was one we strongly recommended, and it does ample justice to all we said of it. We presume the flower loses its edging as the season advances; but at present we have nothing half so beautiful among light flowers already out.

Mr. Bragg showed the *King of the Dahlias*, not sufficiently out to be first-rate, but quite good enough to sustain the character we gave it; other blooms, by comparison, looked rough and mean. *George Glenny* was shown, and fully proved that it is one of the most useful, if not the most perfect, of the yellows. *Admiral* was well shown. Dr. Bushell showed a number of seedlings in a stand of twenty-four; among them a fancy flower, very brilliant carmine, tipped with white, and better than average form. We shall see this again, we presume, shown as a seedling and named, and shall not lose sight of it.

The worst things shown were *Fuchsias*. The sorts, for the most part, badly selected, and none well grown; all straggling about, or propped up with sticks, or tied up with ligatures. The *Dahlias* were good for the season; but the want of that experience, or thought, which does not much trouble the committee of the South London, left growers in doubt as to whether fancy varieties might be shown among the regular varieties or not. Accordingly we see that two of the exhibitors, who took first and second prize in the nurserymen's class, went upon opposite tacks. Mr. Keynes, of Salisbury, confined himself to the ordinary show varieties. Mr. Turner, of Slough, mixed them, taking the best of each. The judges gave the prize to the stand of all ordinary kinds. Mr. Turner paid the penalty of his taste. On no other ground could the flowers of Mr. Keynes have been placed before Mr. Turner's. But why should showers be left in doubt about such matters? Men entrusted to draw up schedules should be persons capable of making all the world understand what they mean. The fancy flowers have been so

completely a class by themselves, provided for separately, that the having but one class would easily be understood to be open to both. If they did mean this, Mr. Turner's flowers were best; if they did not mean this, Mr. Turner's flowers should have been turned out. *Honey* and the *combs* now make a conspicuous feature at these shows, and form a most interesting part of the exhibition. *Vegetables* and *fruit*, unless they are from cottagers, are so inferior to those at Covent-garden Market, or any respectable fruit-shop, that we think all the prizes given for things of the kind waste. Let us see fruit shown on the trees or plants, if at all. After the flowers and plants were cleared away, the gardens filled rapidly, and there could not have been many less than twelve thousand persons present when the fireworks were let off. There was a superb tent erected, of large dimensions, in honour of the occasion. Jullien led the band in the former part of the evening, and Godfrey directed the second part. The last show comes off the 5th September. There are two things that render this show useless to dahlia growers; first, nobody is required to show more than three blooms of seedlings under proof, so that the most uncertain flower that was ever raised can be shown; secondly, there has hitherto been no dependance whatever on the judgment, for three blooms can be dressed up of very rubbishing flowers to appear better than they can ever come again. We cannot find six first-class flowers among the one hundred and fifty new ones sent out, or advertised to be sent out, last year. One party fortunate enough, to obtain a first-class certificate, declined sending the Dahlia out; such was the folly of trusting to three blooms that he found the flower totally worthless. The committee of the South London Society did the dahlia trade incalculable mischief by changing the test of a new flower from six blooms to three, although it is well known that the year a flower is proved the grower has the whole stock of plants to cut from.

Campanula vidalli is a novel and beautiful plant, shrubby, and even hard-wooded in the main stem, though the specimen we saw was, to all appearance, an old plant.

It throws up leafless stems, which, in the plant in question, were tied up not to the best advantage. The blooms are singularly formed, the base being as large as the lip, and the flower smaller in the middle. Ten or a dozen flowers hang along the upper half of the stem, which, if at liberty, would evidently form a graceful bend, something like *Dielis spectabilis*. The individual blooms are rather over an inch long, and half an inch wide at the base and lip. We have seen dice boxes very much the form. We consider it a great acquisition from its novelty and elegance, and a well-grown specimen would be a beautiful object. We should think it strikes freely from cuttings. Messrs. Osburn, of the Fulham Nursery, have the plant in flower.

There is, at this time, a splendid specimen of the striped (variegated) *American Agave*, coming into flower at the seat of the Rev. Sir Thomas Cullum, Hardwick House, Bury St. Edmund's. It has already risen 17½ feet, and is still growing on. E. Y.

NEW PLANTS.

THEIR PORTRAITS AND BIOGRAPHIES.

THE CARACCAS WIGAND (*Wigandia Caracasina*).—*Botanical Magazine*, t. 4575.—This is a tender stove shrub, which was first discovered by Humboldt and Bonpland, at the Quebrada of Coteida, at a height of 2880 feet above the level of the sea, whence it was sent to the Royal Garden at Berlin, and afterwards to his Grace the late Duke of Northumberland, where it first flowered in England. It blooms in February; and a figure of it was published in *The Botanical Register*, a useful work which is now discontinued. The plant

flowers at uncertain periods, and is a desirable subject for a choice collection of stove plants. The flowers are



of a beautiful lilac colour, and remain a long time in succession, from a spike not unlike that of a Boragewort. "If well grown and formed into a bush, feathered to the surface of the ground, this plant must have a very beautiful appearance, with its large clusters of delicate lilac flowers. But if formed into a sort of stake, with a few leaves and flowers at the top, as is (was formerly) too frequently the case with stove plants, it will be found to possess little claims to attractiveness." The cultivation of stove plants has made a rapid advance since this passage was written by Dr. Lindley; one might visit many gardens now ere he could find "a sort of stake," "long-legged," or "bare-legged" either, in our plant houses. However, these conditions were to be seen everywhere among our plants formerly; and it may not be right, now, that we should forget them so soon, if only to make us more thankful for a better state of things, and for our own share in producing the change.

The genus *Wigandia* was named by Kunth in honour of John Wigand, a Bishop of Lithuania, a promoter of botany and other branches of natural history. It is now included in the Natural Order *Hydrophylls* (*Hydrophyllaceæ*), to which Order the *Hydroleas*, of which *Wigandia* is a close ally, have been recently removed, because even sectional characters could not be found to distinguish them; therefore, with such plants as the *Nemophilas*, *Eutocas*, and *Phacelia*, the old *Hydroleas* now make up the Order of *Hydrophylls*, and in the Linnaean system *Wigandia* is placed in the first order of the fifth class, *Pentandria Monogynia*. Its stem is herbaceous, and hairy all over; leaves, alternate, on long stalks, pointed egg-shaped, scalloped, and toothed at the edge, and hairy on both sides; flowers, in panicles; stalks, short; calyx, five sepaled; corolla, funnel-shaped,

five-lobed; filaments join corolla near the base; anthers, arrow-headed.



DARK PURPLE MORMOD (*Mormodes atro-purpurea*).—*Botanical Magazine*, t. 4577.—This is a stove orchid, first introduced in England by John Wilmore, Esq., of Oldford, near Birmingham, with whom it flowered for the first time; and a coloured portrait of it appeared in *The Botanical Register* for June, 1836. Mr. Wilmore's plant was discovered on the coast of the Spanish main, we believe, by Mr. Henchman, who was exploring that coast, for Mr. Low, of Clapton, in 1834, when this plant is recorded to have been introduced. Recently, that is in 1849, M. Warczewitz discovered it in Panama, and sent it over for public sale, and this second introduction flowered with J. D. Llewellyn, Esq., of Penlergare, a very zealous grower of the tribe, in one of the most unique orchid houses in the country, a plan or view of which is, we believe, published in the first volume of the "Journal of the Horticultural Society."

The name *Mormodes* was founded by Lindley, to convey an idea of the very strange appearance of the members of the family, and is derived from *Mormo*, a ghost, or some frightful looking object,—a name which was allowed at the time, by the best judges of such things, to be very appropriate, but which has since turned out to be not only the most fitting, but also the most fortunate of all the names the professor has founded in this Order, and they are many. The Mormods, or Goblins, occupy a middle space between *Catasetum* and *Cynoches*, two families endowed with a spirit, which, in romance, is only and exclusively assigned to the fairies, that of transforming themselves from one individual shape into another, as goblins can do, according to the worthy nurse who took special care that we should be taught this branch of unnatural history.

"Among the most singular circumstances connected with this Order is the manner in which, upon the same spike, flowers of extremely different structure are produced. This was first noticed, in Demarara, by Sir R. Schomburck, who published in the Linn. Transactions (17—551) an account of the production of *Monacanthus viridis*, *Myanthus barbatus*,

and a *Catasetum*, three supposed genera, upon the same spike; and he expressed his opinion that the *Catasetum* was the female of these, because he found it producing seeds abundantly, while *Monacanthus* was uniformly sterile. Afterwards, a similar specimen made its appearance in the garden of his Grace the Duke of Devonshire, at Chatsworth, and has been figured in *The Botanical Register*, fol. 1951. And still more lately two species of *Cynoches ventricosum* and *Eggertonianum*, have appeared in company.

"Such cases shake to the foundation all our ideas of the stability of genera and species, and prepare the mind for more startling discoveries than could have been otherwise anticipated."—*Dr. Lindley, Vegetable Kingdom*, 177, 178.

All these strange plants, whether they are species or not species, ghosts or goblins, strange looking or very beautiful looking objects, require the very same treatment. In the first place, they delight in the full sun while they are growing, and are so fond of water that they will even dip their long roots into a cistern of water and feed on it for months. When dry they are best kept cool, and when they begin to grow in the spring they should be gently introduced to increased heat.

Mormodes atro-purpurea has clustered, very pointed, oval, pseudo-bulbs, sheathed in imbricated scales, buff coloured, edged with green; flower-stem, jointed, round, and a foot high; sepals and petals, nearly uniform, and bent back like those of the *Cyclamen*; lip, stretched out, with sides curled down, covered with short hairs; the whole of the flower "a nearly uniform dark purple-brown, or between chocolate and blood colour."

B. J.

THE FRUIT-GARDEN.

THE VINE OUT-OF-DOORS.—Some queries received from a correspondent (*Pitti*), and others, reminds us, that a word on the acceleration of out-door vines may not be unseasonable.

As "*Pitti*" seems to pretty well represent that section of our readers who may need advice, we will keep an eye to the points contained in his letter. "*Pitti*" says, "glass is considered the most appropriate, but how should it be applied?" About the appropriateness of glass there cannot be a second opinion; it is not only the most appropriate, but is what ought to be expected of every ardent amateur, unless in a few of the very warmest portions of this island, and even there it is by no means needless. Glass is now so cheap, so good, and withal so efficient to the end in view, that we have no doubt many miles of walling will speedily be covered, if only during a portion of the year. What is wanted is some plan which shall form a *system*, combining the culture of tender plants at one period, and of plants or other horticultural objects at other periods, with facility, and without any compromise of the objects sought. We do not suppose that we can fully settle this in the limits of a single paper, and for the present must attend to the wants of the period; proposing, however, to pursue this interesting subject in future papers.

To "begin at the beginning;" as the time is now short, or rather very short days are fast approaching, every possible means should be taken to suffer solar light to have a free influence on the leaves of the vines. In saying leaves, however, it is necessary to make a distinction; the foliage on a vine (or any other shrub which continues to produce new growths all the summer) is not all of one character as to its influence on the tree. One character of foliage takes from the root, to *repay it* at compound interest; other foliage absorbs that for which time and light will not enable it to furnish an *equivalent*. As we write for the million, and they are, as a body, not "well up in their points" as to these niceties, we may as well explain. The vine, everybody knows, in its first efforts in the spring to produce foliage, produces leaves which may fairly be termed *primary* leaves; these ultimately become the largest leaves on the tree: and from these, it would appear, the chief of

those elaborations proceed, which feed not only the fruit, but the buds from which the ensuing year's fruit must be expected.

Since, then, our English summers are not all that could be desired, it is evident that no spray should be permitted to shade the principal leaves: this is the first point as to the acceleration of the crop, and should be rigidly adhered to all the summer, more especially when the berries are about to take their last swelling. All such (if not hitherto done) should be pinched back, or in many cases totally removed, for from the beginning of August the sun should not only shine on the foliage before alluded to, but *on the wall behind*. The shining on the wall is a point too little attended to, as to fruit-trees in general; we lay the utmost stress on it, and to that end train our main shoots of many fruits farther apart than many do. Some people seem to think that the more wood they can reserve of a fruitful appearance the better, but it is not so by any means; a little thoroughly-ripened wood is by far preferable to any amount that is immature.

Next in importance at this period is the stopping the points of every terminal shoot; there is no benefit in the extension of such after the middle of August. All new growths, indeed, afterwards, as before observed, take from the tree what they cannot repay, and should by no means be encouraged.

And now we may say something of the root management. The vine *out-doors*, in this country, will endure an amount of drought that would almost prove fatal to many tender fruits. Nevertheless, to *endure* and to *require* are two very different affairs. Perhaps the majority of out-door vines receive, in the aggregate, by far too much moisture, especially if their soils are of a retentive character, but this *they should never be*. Still, when the soil is light, the border or site somewhat elevated, and a dry period occurs during the end of July and early part of August, there is no doubt that one liberal watering with *liquid-manure* would be of much benefit, as enabling the trees to swell their fruit freely, and as preventing anything like a stationary condition in the tree. For although the spray must be kept pinched back, yet it is a necessary and healthful condition in vines to be constantly producing a slight amount of it. This argues a lively root-action, and guarantees that the primary leaves shall be well charged with sap for accretive purposes.

COVERINGS.—These may be used for two purposes: the one to augment the amount of heat, the other simply to arrest its radiation. Of the first character is glass; and the second includes any kind of *non-transparent* material, as canvas, bunting, &c., &c., to which may be added copings, as an adjunct. The immense advantage of the glass is so manifest as to need no further remark; but one thought certainly does arise in the mind whilst advising the application of glass; why not so place it as that the owner can walk beneath its protection, and if he chooses, take the liberty of putting pots of choice plants beneath the fostering roof? And here we come at once to a sort of greenhouse. Well, and if we do, there need be no alarm. The worst of it is, that a greenhouse sounds expensive to those who have not hitherto indulged in this luxury; they cannot separate from such things the idea of expensive fires, professional attendance, &c., &c. Now it should be understood, that these are not necessarily connected. Certainly, if the owner *will have a collection* of plants, selected on the score of novelty or beauty, without regard to their habits, he will generally entail on himself the extras alluded to. And many err this way simply for want of setting out with a more definite object. However, we must of necessity reserve farther remarks this way for another paper, and keep close to the case in hand. In fitting up mere glass frames as a temporary expedient,

there should by all means be a coping above and a sill beneath. The coping may project about nine inches, and the sill beneath to receive the sashes about four feet; still this depends on their height, for just as much as will provide head-room for the operator will suffice. This will be found much better than placing the sashes nearly close to the wall. Some ventilation will at times be necessary, and this we would effect by means of the coping. The latter, therefore, must be at liberty to move up and down, and may be placed in an inclining way: the outer edge overlapping by a few inches the rim of the lights at the top, in order that when tilted, or rather drawn up, at any given angle, hail storms or dashing rains may be excluded. The top or rim of the lights may be made to abut against blocks, fastened to the face of the wall, and then a pulley here and there, with a rope attached to the coping, which may rise in lengths on hinges, will work the whole with facility. Then, in giving air, a pull at the rope would raise the flap to any graduated height, and a fastening must be made accordingly at the lower end of the rope: this will ensure a certain and easy ventilation, and exclude hail and rain. As to the application of canvas or other materials to prevent radiation, and the starving effects of cold winds, such may be applied as for the blossom-protection in spring. A thick material would, we think, be desirable, one withal somewhat close in texture. This may be applied as soon as possible, and should be let down betimes in the evening; in fact, covering up the trees just *before* the sun left the wall, say about five P. M. during the present month, and at four during the succeeding one. It must be taken off the trees as early as possible in the morning, say five to six o'clock. On dull afternoons it need not be drawn over the trees until nearly dark, for its purpose then would be simply to ward off cold winds and the night dews; the latter of which hold no mean position as agents in the dissipation of heat. During *very cold* and stormy days, it might remain over the trees nearly or quite all day.

Some persons may think the partial deprivation of light very injurious: in a trifling degree it is so, but this will be more than compensated for by the increase in the aggregate amount of heat, for the latter more than light is the thing wanting to the vine during the autumn months. By a close attention to these points, there is little doubt that nearly three weeks may be gained, and this is about the amount of time by which our climate falls short.

It is almost superfluous to point to the eligibility of the spare sashes of frames, pits, or greenhouses; where these are available they should at once be applied. All that is wanting is to contrive some apertures at the top for the escape of superfluous heat, and capable of being closed with facility in due time. Such apertures may be very small, for we are not quite sure that the vines would take much injury after the end of August, if no openings were provided. It is, however, a duty on our part to point to the possibility of such a thing.

By-and-by we will endeavour to show forth a system, which shall be adapted to those amateurs who do not possess a greenhouse, and who could wish one set of frames to perform every purpose for which glass is required.

R. ERRINGTON.

THE FLOWER-GARDEN.

Of all the new plants of this season which are suitable for the flower-garden, there are two which I want particularly to recommend, one of them as an excellent bedder, the other for a border plant where a selection of mixed plants are kept; and every good flower-garden ought to have a "mixed border," as highly cultivated as the best beds. *Phlox depressa* is the plant for a

bed, and the one which surprised me the most of all that have passed through my hands these ten years past. It is a hardy perennial, with the flowers and habit of a good dark-red *Phlox Drummondii*, and is clearly a cross between an annual and a perennial; but I know nothing more of its biography. When I was told of it, last year, by my friend Mr. Latter, our champion cucumber grower, now a prosperous nurseryman near Ipswich, I could not make up my mind at all to his account of its parentage, for it is not often that we see or hear of a genuine cross between such parents. Indeed, I cannot at this moment bring another such instance to recollection, although I have worked in that line for more than twenty years, and had the advantage of a correspondence with the masters of the art among ourselves and on the Continent; but there it is, and if it will seed, there is little chance for the *Drummondii* after a few years. Whoever named it made a great mistake; cross seedlings should never be named after the manner of botanical or wild original species. I have often been saddled with queer names which I never thought of; but I hardly ever name one of my own seedlings.

The border plant I had last autumn from the Horticultural Society, is a *Penstemon*, called *Azureum*, and it is the most graceful of that graceful family; not so gaudy, of course, as the red ones, but a better style of growth than any of them. Its leaves are so narrow that one can see every joint and part of the stems, and the stems themselves so thickly furnished with the flowers all the way up, that every joint has a whorl of them. The height is, with me, about twenty inches; the plant was stopped three or four times, so that it is quite a bush. It comes from cuttings as easily as verbenas, and, if it were planted in a bed as thick as we do the verbenas, I should not be surprised to hear of its turning out a good autumn bedder; a neutral one it must be, for *azureum*, or azure blue, does not describe the colour of the flowers at all, they are of a mixed colour, blue, brown, and purple shades. It seeds quite free, and if it would cross with the true *Penstemon gentianoides*, which is also of a purplish blue colour, both might possibly be improved, and run into useful varieties, like the blue larkspurs, of which I am afraid we have lost the true blue branching variety: I had a row of it as lately as 1842, but cannot find it since. Many of our readers were so kind as to send me seeds, and specimens in flower, of what they believed to be this variety, but no, no, all of them had the purple tinge.

The Horticultural Society sent out the true *Penstemon gentianoides* a few years since, but instead of "true," they put "*vera*" on the labels, the botanical Latin word for true; and an honest friend of mine kept the plant in the stove till it filled the house with red spider, thinking, all the time, from this *vera*, that the plant was from Vera Cruz, the hottest part of the Mexican coast, and to this day he says it is a rascally bad thing! Still, I am in hopes it may be the means of getting us a race of blue ones by the help of *azureum*. Being two wild species, they may refuse to cross; but I have known two or three instances in which this has been overcome, and it is the most singular thing I have met with in these experiments. If they will really refuse, get up a lot of seedlings from each of them, and although to all appearance these seedlings may seem to be nothing but a recast of the old parents, the chances are, that out of the lot some one will take to the pollen of one of the others, and even if all these refused to cross, there is yet another chance, through another generation of seedlings, and so on, for no one can say how many generations. It is not by bestowing the best culture on a wild or cross seedling plant for half a generation, that we can get it domesticated, as it were, so as to produce a better, but by raising seedlings from seedlings every year, which in the long run may produce a break in the

original qualities of the stock parent, through cultivation.

If we say that the *White Horse-shoe geranium* has been grown well for the last 21 years, and that fresh cuttings of it were made every year to continue it on, it is no more improved in its nature for the cross breeder than it was 20 years since. It may turn out that I may never cross another white geranium, but whoever chooses to follow out this plan with the miserable lot of seedlings I flowered this season, will be sure to succeed, sooner or later.

Last spring I suggested a trial of a pretty little blue-flowering British plant—the *Veronica chamædrys*—to have it taken up and divided into small pieces, each having roots, as we do other plants of the same habit, to prolong their flowering. This *Veronica* comes into flower early in May, and is one of our best blue flowering native plants, growing along the road-sides in dry places, and on banks and waste-grounds everywhere all over the kingdom. It lasts in bloom about a month or five weeks, and as it follows on the heels of the blue *Nemophila* from autumn sown seeds,—is just of the same size and way of growth; and, moreover, can be removed to a private corner, as soon as the flowering is over, early in June, without sustaining the least harm, I would strongly recommend a little bed of it to be tried on its old merits next May; but this is the best time to think about it. Any good gardener in any parish in the three kingdoms can point it out to amateurs; and it might be planted as soon as a small bed is cleared in the autumn, or it might be used as an edging plant to a large bed, in which a mixture of the common spring plants are to bloom. I made seven little beds of it last April, and that was in time for flowering. The beds were on gravel, in circles, and only two feet across, with a strong, old standard rose in the middle of each; so that, if the experiment did not succeed, nobody should be offended by the failure in the very centre of the garden. Well, the experiment did fail completely. The late removal of the plants might have caused this, however, and the experiment will be repeated next spring, when the plants will be divided six weeks sooner. Last May they were put back a fortnight by the removal, but they flowered out their full time most beautifully, though they did not go on a day longer than their wonted time in a state of nature. Ever since, they have made as pretty a carpet for the rose-standards as any at the Crystal Palace; and the good soil and freedom from other plants have made a great change for the better in their looks. They might now be mistaken for some dwarf *Verbena* out of bloom; and, if it were needed, the seven little plants would now, or very soon, furnish fifty or sixty plants each, and the whole came from a single wild patch last April; so that, if once tried, there is no fear either of getting a good stock of it, or that any one would give it up after a year or two.

I find that one can manage to have the other new mixture of *Zauschneria* and *Cuphea*, either as a reddish bed tinged with orange, or as an orange bed tinged with red. I see, also, that in another year it would improve the bed to have a row of the *Zauschneria* planted all round it, without the mixture; and that would much improve it, looking at it from a distance. The way that the red or orange tint is given is, by going over the bed once in ten or fourteen days from the middle of July, and cutting or thinning out the shoots of one of the plants; thus giving more play to the shoots and flowers of the other plant. For my own individual opinion—which, however, I have no wish to force upon others—I prefer an exact balance of the two plants and colours; if one of them gets stronger than the other, let it be thinned, of the longest and oldest shoots; and my reason is this—for opinions without explanation are no better than green gooseberries—do what we like, this bed can-

not come into an arrangement of colours; but is in itself much richer with the two plants, and by giving more of the one colour we seem to be striving to do an impossibility. To turn one of the best neutral beds we have to the character of a decided coloured bed—a red, or, say a more reddish border, given to the bed by a row of the *Zauschneria*—does not war against this criticism, because it is but deepening the shade at the sides, as one may see in the paintings of the first masters. I have two instances of the same principle in a couple of basket-beds, ten or twelve feet in diameter, the basket part being of fancy wire-work, eighteen inches high, and sloping out like the limb of a *Convolvulus*. In the centre of each basket is a patch of *Salvia patens*, blue and white, and five feet in diameter, leaving a yard all round to be filled with something else. If the whole of the baskets were to be planted with blue and white Salvias, nothing could be easier, as blue and white look well, either mixed or in rings, of one colour; not so, however, when another colour or colours is to be added on the outside of the Salvias, as in the present instance. The very centre is all of blue Salvias; round this, blue and white Salvias in equal quantities; and to produce a greyish-blue or ash-colour in this ring, I mixed a very light-blue corn-flower with the blue and white Salvias, and the effect is most pleasing. Now, if a very distinct colour was placed outside this shading the effect would have been lost; and here the planter was tied down to two points. A lower plant than the Salvias and corn-flower must be used to graduate the height from the centre to the side of the basket, and that plant must not have a distinct colour in the flowers. In one of the baskets I tried four kinds for this *outsiding*, but they are all wrong, and they offend the eye every time I pass. But in the second basket I succeeded perfectly, and that, too, with a plant which I did not at all expect at the time would look anything but so-and-so. I used it rather because I had plenty of it to spare at the time; so difficult it is to tell the effect of two plants, or, indeed, any new arrangement with flowers before an actual trial is made. The plant is the *Viscaria oculata*, and in a mass of it, two shades of red or pink are always seen, and a third and lighter shade after the flowering begins to fade. Trained on the wire, and as a rim to this bed, is a pure white *Petunia*. The whole basket is, just now, perfection itself.

D. BEATON.

GREENHOUSE AND WINDOW GARDENING.

A GROUP OF LEGUMINOUS, PEA-BLOSSOMING PLANTS HOVEA.—This genus consists of evergreen species, natives of New Holland. All of them are very beautiful, but somewhat difficult to get into a sturdy, bushy, compact habit of growth. The flowers are either purple, or a deep purple-blue; and are produced most profusely on the young well-ripened wood of the previous season, a fact which furnishes the key to their successful cultivation. Another recommendation is, that they all bloom freely in the early spring and summer months, when flowers are comparatively scarce in other departments. I shall merely instance a few where all are beautiful.

H. Celsii.—Habit rather straggling; height from two to five feet; leaves somewhat lanceolate; flowers deep purple-blue, produced at the base of the leaves, often in whorls, or masses; one of the most beautiful of the family, flowering generally from April to July.

H. pungens major is another beautiful species, with blue flowers, introduced a few years ago from the Swan River, and which I have not yet seen, except as a specimen figure, I forget where; but which will, no doubt, soon be plentiful.

H. latifolia.—A beautiful species, with leaves broader and larger than *Celsii*; part of the flower the standard blue, and the keel purple; the flower is also larger, and the plant altogether more strong growing.

H. elliptica, with roundish oval leaves; *ilicifolia*, with curled holly-like foliage; *lanceolata*, spear-like leaves; *longifolia*, long leaved; and many more, are all species having purple flowers, blooming from March and April to June and July, and worthy of culture where room can be afforded them, more especially as from two to four feet in height, and rather less in diameter, may be taken as their general range of growth, when full justice is done to them; and all requiring similar culture, though *Celsii* perhaps, of all others, requires the greatest attention. I shall shortly allude to their general management.

Propagation.—This is effected by seeds. Most of them will ripen their seeds, but very few should be allowed to remain, and only those from the *first-formed* flowers, for two reasons: the first is to prevent the plant being exhausted of its strength; the second is to enable you to prune back the plant as early as possible after the beauty of the flowering season is gone. The seeds, being obtained as early in the summer as possible, may be dried and sown as soon as ripe, or they may be preserved in a dry cool place until the following March. In both cases they will be better for being sown in sandy peat, and then plunged in a sweet hotbed, giving more coolness and air as soon as vegetation has taken place. If not sown until the following spring, steeping the seeds in warm water of 130° for twenty-four hours will cause them to vegetate sooner. As soon as the plants are a couple of inches in height they must be pricked off round the sides of a pot, in sandy peat, with a trifle of leaf-mould; and kept close for a little time in a mild hotbed, or if in the heat of summer merely a close frame, until growth has fairly commenced.

By Cuttings.—These should be the points of young shoots, getting a little firm, in April or May, or, better still, some nice stubby side shoots, about two or three inches in length, cut clean off close to the stem, or so near as not to injure it. Cut a cross at the base with a sharp knife, and remove merely the leaves there and one or two above,—success greatly consisting in retaining as many leaves as possible, and then taking care that these leaves should act as absorbers quite as much as perspirers, by keeping them in a close atmosphere, and in as much, but not more light than they can bear with impunity. For this purpose, the cuttings when made should be inserted in pure white sand, over sandy peat, well-drained,—in fact, in all these operations, more than three parts should always consist of drainage. If the cuttings are placed round a pot, inverted in the inside of a larger one, as sometime ago recommended for the *Chorizema*, success will be all the more certain, and less trouble will be occasioned for drainage than by any other mode. When settled and firmed by watering, and allowed to get dry in the shade, clean conical-shaped bell-glasses should be fixed in the sand around the cuttings, and then the plants should stand in a close frame or pit, where the heat will only be a very few degrees higher than what the plant enjoyed before the cuttings were removed. If during the day the heat from the confined air should become too high, and thus have a tendency to *spindle* the cuttings upwards—a tendency always increased by dense shading,—it is better, instead of thus increasing shade, to damp that already in, and give a little air at the back of the pit or frame to allow the heat to escape. From inattention to this, we have known valuable cuttings so *attenuated*, that healthy plants from them afterwards could hardly be expected without great future care and trouble. A moist, close atmosphere is of the first importance in striking cuttings in general; shading from bright sun-

light is another indispensable; but both may easily be carried to excess, especially if the *temperature* is allowed to rise to a great height. Where quick rooting is an object, it is much better to remove the cutting pots, after having stood three or four weeks in the cold frame, to a mild bottom-heat,—say from 75° to 85°; but even here the top temperature should seldom average more than 50° by night and 75° by day, or in summer should seldom be much above what it is in the open air. If conical glasses are used, *wiping* them will be more a matter of *amusement* than *necessity*, and lifting them for watering purposes will be seldom required;—tilting up one side at night, and increasing the space by degrees, will be of more importance, taking care, however, to shut down close in the morning, before the sun strikes upon them. I have several times shown that *refracted* light is better than *shaded* light, and that by placing cuttings at a certain safe distance from the glass, shading might be altogether dispensed with,—a matter of importance to amateur operators, who must sometimes depend for assistance in their absence to the *not most* willing hands.

Future Management.—If the plants are struck early, they should be pricked out round the sides, say four of them in a four or five-inch pot, or singly, if strong, into three-inch pots. For keeping over the winter, it is generally the safest and easiest mode to prick out such small plants round the sides of middle-sized pots, as the moisture, temperature of soil, &c., are more equable than when each little plant has a pot to itself, while the trouble of attendance is greatly abridged. If the cuttings are not ready to be potted or pricked off before the middle of September, provided there is sandy peat below the silver sand, they will be kept safer in the cutting pots all the winter. In either of these cases, the plants should be kept on a shelf near the glass, where they can obtain the highest medium temperature of the greenhouse in winter, and abundance of air whenever the external air is not stormy, not loaded with moisture, nor below 38° or 40°. In either of these cases, the amount of fresh air (unless heated before entrance into the house) must be limited.

Potting.—This is best done in the spring months in the case of young plants;—in the case of established ones, it may be done any time in summer after flowering, when fresh growth has commenced. Where proper attention can be given, after the plant is a foot or eighteen inches high, it may be treated on the one-shift system; in all other cases, the successive shift system should be adopted, and not too large shifts at a time. I need not add that drainage must be particularly attended to. To prevent the access of worms, amateurs should use caps or bowls of zinc or galvanized iron inverted over the hole, in the bottom of the pot, with plenty of rough, and then finer drainage above, surmounted by a little green moss, or chopped straw, to prevent the earthy matter clogging the drainage. If such a plant without some of these precautions is set in the ground, even for a short time, a worm or two will *try* and wriggle themselves in; and as the plants neither like much *lime water*, nor to be much *disturbed* about the roots when growing, there is a difficulty in getting the slippery gentlemen dislodged. The cap is one of the best means for keeping them out.

Soil.—For young plants, this should be composed almost entirely of fibry sandy peat, with a little dried leaf-mould; as the plants get larger, a little fibry sweet loam may be added. The larger the plant, and the larger the shift, the rougher should the compost be. For medium circumstances, the compost will answer well of four parts fibry peat, one part very fibry sweet loam, one part silver sand, and one part of equal proportions of rough charcoal and pounded bricks or broken freestone. The largest pieces for a large shift should be less than a walnut, and the least, half the size of small peas, the

very dust being sifted out before the sand is added. A slight layer of finer compost should be placed upon the surface.

Temperature.—After potting at whatever time, the plants should be kept closer and warmer than usual to encourage growth, exposing them to sun and air by degrees. The common temperature of the greenhouse in spring and early summer suits them well when blooming; but when that is nearly over, and the plants have received their pruning, any close pit, where a moister atmosphere and a higher temperature can be given them, will encourage fresh growth. When that has taken place, the roots, if necessary, may be examined, and the plants returned to the same position, taking care, however, that they are more exposed by degrees before the end of autumn, so that the wood may be well matured; on this maturity depends, in a great measure, their winter treatment. Those best ripened will stand a low temperature and an abundance of air, that would ruin those more coddled in the autumn. As a general rule, the plants should seldom be below 45° in winter, if it be desirable to keep them nice and healthy. A rise of from 10° to 15° may be allowed from sunheat. A slight shade will be wanted when growing in summer, but *full exposure* towards autumn. I have seen nice plants that were never removed from the greenhouse, but I would prefer a closer and warmer place when making their wood than would suit the generality of greenhouse plants, such as geraniums, cinerarias, &c., in summer; but if the greenhouse is kept close for the sake of growing azaleas, camellias, &c., then that alters the case, and it would just be the place for the *Hoveas* when growing.

Training.—The trellis one-sided system, especially for plants that have no liability to twist, twine, or creep, is very properly being discarded. Every appearance of *twisting*, even when done to give a bush-like character, detracts from the beauty of the lovely *Hoveas*. The bush-system must be given at once, when the plant is young, by stopping, and by tying-out the side shoots from the base of the plant to the side of the pot, fastening them there to little sticks, or, better still, by strands of fine matting or worsted thread, to a ring fixed beneath the rim of the pot outside. This training must also be kept in view when

Pruning back somewhat freely the flowering shoots, previously to setting the plants growing for another year.

Watering is an essential point; the plants will neither endure the torrent spout system, nor the surface soil the dribbling from a fine rose. A medium between the two will be found the best, such as placing a large potsherd, or a good sized oyster-shell on the surface of the pot, and pouring the requisite supply of water slowly on these mediums. I have several times lost fine plants, solely, I believe, owing to the careless use of the water-pot. In winter the water should be *pure*, and not below the *temperature* of 50°. If enough is given at a time, waterings will not often be required in winter. As the flower-buds begin to swell, more will be necessary, and a very weak solution of old cow-dung will then be advantageous, but it must be *weak* and from *old* dung. When growing, they must have abundance of water. During the whole period they stand on the shelves in the greenhouse, to prevent sudden extremes from sunshine, dry cold air, or brisk fires, the plants will be rendered more secure by standing in double pots, the space between them, at the top at least, being stuffed with moss, or any other more come-at-able substance. When growing, the syringe may be applied often, but *lightly*, morning and evening. In winter and spring, before the flowers open, fine dustings may be given in the middle, or very early in the afternoons of fine, mild, sunny days.

Insects.—Less or more, they are attacked by the usual depredators we alluded to last week, but the most trou-

blesome is a white-haired scale insect. Washing first with soap and water, and gum-water, and afterwards, in the course of twenty-four hours, with warm water, at a temperature not above 100°, will be found the most cleanly, if not decidedly the most effectual remedy. I have mentioned the temperature above, because, though I have cleared many plants of insects by dashing water against them at 130° and 140°, one experiment, at least, seemed to tell me but too well that the *Hoveas* would not endure it.

R. FISH.

HOTHOUSE DEPARTMENT.

EXOTIC STOVE PLANTS.

LAGERSTRÆMIA INDICA (Indian L.); East Indies.—In the human mind there is planted, and no doubt for wise purposes, an eager appetite for novelty. Something new is sure to command attention, and create a desire to possess it; and this applies to plants as well as to other things. But this passion may be carried too far. We may wish to have, and cultivate with care, every new or lately discovered plant, and such wishes may be laudably gratified, provided old and deserving plants are not neglected, badly treated, or, perhaps, not grown at all. These few remarks were suggested to our mind by seeing lately a fine, well-grown, and freely-bloomed plant of *Lagerstræmia indica*. It was exhibited at the Leeds Horticultural Exhibition, by Mr. L. Barker, gardener to W. Smith, Esq., of Roundhay, near Leeds. It was five feet high, and four feet through, and had numerous panicles of its beautiful rosy pink blossoms. This is an old inhabitant of our stoves, but it is seldom seen in such beauty as the above specimen exhibited. We are inclined, as far as lays in our power, to rescue this deserving-to-be-grown plant from neglect, and shall, therefore, devote this week's paper to its culture. Though a native of India, it is by no means difficult to grow; the only thing wanted is patience. It requires to be a somewhat stunted and old plant before it flowers freely and annually.

Propagation. By Cuttings.—The young shoots make the best, because they root the readiest. The smaller they are the better. Choose the tops of the weak side shoots rather than the strong ones; these latter being apt to damp off. Plant them in sand, under a bell-glass, in heat, watering with a fine-rosed watering-pot when necessary; that is, when the sand is dry. Keep the glass off for an hour after watering, to give time for the leaves and the surface of the sand to dry partially. To prevent them from suffering from excess of light, do this watering early in the morning or late in the evening. Shade from bright sun, and, as soon as growth is perceived, give a little fresh air to the cuttings by propping up the bell-glass; and as soon as it is pretty certain that roots are formed, let the glasses be left off all night, and replaced every morning, till the cuttings are able to bear full exposure; then pot them off immediately. And here we will give a general rule which applies to all kinds of cuttings. *Let them be potted off always as soon as roots are formed.* The reasons for this are evident enough. There is not much support in fine white sand; the ends of the roots are apt to perish if left too long in it; and lastly, they, if left too long, become so matted together, that considerable injury accrues in separating them; therefore, pot off early into small pots, and place them for a short time under hand-glasses till they are fairly established.

Soil.—These plants are of a woody character, and, in consequence, thrive best in a rather strong soil. The following compost will suit them:—Good firm loam three parts, sandy peat one part, leaf-mould one part, and a very small portion of sand; mix thoroughly and use it moderately dry.

Summer Culture.—Supposing a young plant is to be grown on, and has passed through the winter in a 5-inch pot, early in March repot it into a size larger pot, rubbing off a considerable portion of the old ball, drain the fresh pot moderately, well cover the drainage with a thin layer of moss, and then a sufficiency of the compost to raise the ball of the plant level with the rim of the pot; fill round the ball with more compost, shaking it down occasionally as the process goes on; this will cause the ball to sink a little lower than the rim of the pot, which will give room to cover it neatly without burying it too deep. Shorten in the shoots, to cause the plant to break forth more branches, and thereby become more compact and bushy. Give a gentle watering, and place them in a heat of 72° by day, and 65° by night. Syringe frequently to keep the leaves clear of dust, and to prevent that destructive insect, the red spider, from annoying them. In these pots they may be permitted to remain till the middle of June, when they must have another repotting and topping. They will, it is probable, have made a considerable number of shoots, and most likely will be tall-grown plants. In such a case they must have some sticks, six or nine inches long, placed all round the pot, and pointing outwards; to these tie each shoot, but be careful in doing it, for the shoots are soon broke or slipped off the main stem. Nip off the tops once more, which will give a sufficient number of shoots to form a handsome plant. In July, place them in a pit without any heat, attending to them duly with water and air. In this position they will grow stout and keep clear of the red spider—an important point to be aimed at.

Winter Culture.—Towards the end of September they will begin to lose their leaves, and should then have a much less supply of water, the great object being to put them into a complete state of rest by the end of October. They should then be completely without leaves, with brown, stout, well-ripened wood; and every care must be taken to keep them so till the middle of February. At that season prune in all the strong shoots to five or six eyes, and cut clean away the small ones. Give them a shift into a size larger pot, and follow the same process through the succeeding season as the previous one. The essentials of this mode of culture are, first, to attain a complete state of rest; and, secondly, to confine the plant in rather small pots. These two points combined will cause the plants to flower sooner and much more freely; though they may, even with all this care, be three or four years old before they flower. There is another species, named *L. regina*, equally, but not more handsome than the one we have written upon above. The same culture suits it in every point.

T. APPLEBY.

FLORISTS' FLOWERS.

MR. GLENNY ON FLORISTS' FLOWERS.

A SEEDLING PANSY (W. T. of M.).—Very pale straw-colour or primrose, too thin and washy for showing; we have hundreds like it to reject week after week. The petals must be thick, and the colour or shade pure, whatever it may be. The texture is poor and papery.

THREE PANSIES sent in cotton, besides the moisture being entirely absorbed, were so completely enveloped in the lint which adhered to them, that it was with great difficulty they were cleared. The eyes run completely into the border, and render them worthless. The smallest may come without doing so, but it is not worth anything, so many are superior in the same way.

PORTULACAS.—Now very brilliant scarlet and purple. The yellow is no advance on the old *Aurea*, nor so good as we have seen it.

ANTIRRHINUMS.—Not one worth growing; size is

nothing without brilliance in a bedding flower. Two colours are quite enough if they contrast well; pure white, straw-colour, or yellow, for the tube, and the more dim and unlike the colour of the lip is the better. On white any brilliant colour would do; on straw or yellow it ought to be deep red, crimson, or dark-purple, the darker the better.

GLADIOLUS AND CARNATIONS.—Every bloom dried up, past recognising. We strongly recommend all who send flowers to write the words "*Flowers for opinion*" outside; they in such case get opened directly and put in water, instead of remaining among letters which we know take no harm for a day or two. The *Gladiolus* may open one of the flowers of the spike. The *Carnations* cannot be noticed from the present blooms.

SEEDLING 25 (G.).—*Purple Dahlia*, white tips, no better than many we have, and, therefore, useless. Seedling 31, petal too flimsy to be good for anything. 19, quills too much to be ever useful, except to those who dress them out; and we never will sanction a flower that wants it. The rest not worth notice.

KING OF THE DAHLIAS.—If thirteen blooms, and all showable, had been sent to us, and we had been informed that they all came from one plant, we could not have credited many people; but, as in company with others, we "saw with our own eyes" thirteen perfect blooms of the *King of the Dahlias* on one plant, and seven or eight just gone by, we, in addition to calling it the best, may also call it the most certain of crimsons. The hot weather fault of the flower is a rib in the petal, but it is fully as necessary as *Sir F. Bathurst*, *Fearless*, or *Princess Radzville*. The specimen of the *King* shown at a certain meeting, put us in mind of old Gable's trick of carrying bad specimens of any flower he wanted to burke or buy. If a gentleman cannot grow a flower, he has no right to show his miserable failures as specimens of quality; they are only evidences of his incapacity. *M. T.*, *X. Y. Z.*, and *J. D.*, who have sent us specimens of the *King*, *Barmaid*, and *Admiral*, to show their superiority, are thanked for their good taste.

HOLLYHOCKS (*M. D.*).—None better than the sorts they come from, and not one new. (*P. M.*).—The sulphur-coloured one is an advance in one respect—the colour, but a complete fall back in others; its flimsy guard petals spoil it. The others no use, except *N. T.*; seed from that, because it has very thick petals and florets, though not enough of them.

VERBENAS (*C. L.*).—All the petals too narrow, and no new colour. (*B. Y.*).—A very large, but very ill-formed, variety, not worth naming. If the money offered by a nurseryman was offered in good earnest, take it. (*J. S.*).—*Mrs. Mills* and *Orlando* are better blues; but the specimen sent will not be the worst sent out, though small.

NAMES OF DAHLIAS.—No 1, *Shylock*; No. 2, *Queen of the East*, but a bad specimen; No. 3, *Master G. Clayton*; No. 4, we do not know, unless it be *Andromeda*, out of character. We will not engage to give the names of single flowers accurately, unless perfect blooms, and accompanied with real name and address of the parties sending. One party, with only two letters to his name, has sent us a flower of *Ne plus ultra*, for our opinion of it as a seedling. This is too bad. We should like to know who played this unworthy trick; but we might have given our opinion of it as a flower, without satisfying him whether we knew it or not.

DISSIMILAR BLOOMS *X. Y. Z.* sends us two blooms that were in a winning stand, one a fancy the other a self, both being the same variety in different conditions, and asks whether the stand was not, if properly judged, to be disqualified? Certainly not! The schedule sent says, twelve dissimilar blooms, and they are dissimilar. The Metropolitan Society's rules govern all shows where the contrary is not specified. Now it is possible to dis-

qualify a stand with two flowers too much alike; *Fearless*, *Admiral*, *Duke of Cambridge*, and *Queen of Lilacs*, although very distinct in general, will often yield two so near alike that the judges have no right to puzzle themselves to inquire. The different degrees of shading and growing will change colours and forms enough to make the approach a good deal too near. What is the object of having dissimilar blooms, but to make a variety? If this is defeated by putting in flowers alike in general features, the shower ought to pay the penalty; but two flowers cannot be more dissimilar than the two sent.

(*T. L.*).—The *Picotees* can never be worth cultivating, they are barred on every petal, that is to say, have stripes in them three parts of the way down; and a good many of them, a bar running half-way down the centre of each petal; but joining the feather at the edge would only make it worse; and bars which do not reach the feathering, are fatal altogether.

FLORISTS' FLOWERS CULTURE.

THE PELARGONIUM—(continued from page 309).

At the above page we briefly described what we considered the best form of greenhouse to grow pelargoniums in for exhibition; we have nothing to add to that description, excepting a very few words about *Heating* it. The only heat wanted is just enough to keep out the frost, and the best mode of obtaining that heat is by hot water circulating in cast-iron pipes. They should be placed near, but not close, to the walls, and about a foot from the floor; placed in this situation the whole of the air in the house will be gradually heated. For a house of the size we have described, two four-and-a-half inch pipes running round it will keep out any frost we are likely to have in this country. Should such an uncommon frost ever again take place as that in 1838-9, it would be an easy matter to cover in the roof and sides of the house, so as to keep the plants alive and in good health. An ordinary saddle-shaped boiler is, we think, a simple but effectual one, and has the advantage of being cheaper, and lasting longer, than any of the more intricate inventions. As we said above, the only heat that is wanted is just enough to protect the plants from frost, more would injure them.

The next grand point is to use the proper *Compost*. It may seem a trivial thing to mention this as an essential article necessary to grow the pelargonium; to the inexperienced it may seem a matter of little consequence, any good garden-mould, as they call it, with a free use of rotten dung, will grow that common thing a geranium. This is wrong; there never was a more mistaken notion. Owing to this, and such-like careless usage, arises the disease called "the spot," and the production of more foliage than flowers, with a coarse, strong growth, very unsightly. The compost we recommend will, we believe, if rightly followed up, with the adjuncts of fresh air, proper watering, and keeping clear of insects, grow them to the highest perfection. Procure from an old pasture, where the grass is of a fine texture, as much turf three or four inches thick as will serve to pot the collection for one year; cast it into the compost-yard, and have it immediately chopped up into small pieces, and, as it is done, lay it up in a long ridge, facing east and west, so that the sun can shine upon each side morning and evening. The ridge or bank should not exceed two feet high, on a base of three feet wide. The grassy surface and green roots will soon begin to ferment during the process of decomposition, and the gases arising will penetrate to every particle of soil, and moderately enrich it, quite sufficient to grow geraniums. Let it be turned over every three months for a year, and then it will be fit for use. Unless it be very heavy, or of a close texture, it will not require any

addition whatever. The grand object to aim at is to have a soil or compost just rich enough to grow a plant to a certain size, without too much luxuriance of foliage or growth, but still of such a stimulating power as to enable a plant to grow to three feet high, and as much through, and to bear or produce so many flowers as to completely cover a plant of such dimensions with bloom. If, however, the soil should be so poor as to need a supply of manure, then use leaf-mould, a year old, and mix the necessary quantity, one-fourth in most cases being amply sufficient. This article may be added at the time of potting.

Garden Pots.—A very few lines will serve to describe a good garden-pot. It is found, by long and careful experience, that plants thrive best in pots that are porous, and not too hard burnt; they must be sufficiently so to make them strong, but no more, and to attain this exact point is the test of the skill of the maker. We have seen very neat pots with a surface almost as smooth as glass, and, consequently, of a very fine, close texture; these, we apprehend, were the worst, though prettiest, kind of pots we ever saw. We strongly recommend to the potters to make their material not so fine; let a pot, when finished, have a rather rough surface, especially on the inside. To prove whether a pot is porous or not is an easy operation: stop the hole at the bottom with some Roman cement, so as to make it perfectly water-tight; then place a weight of some kind inside the pot, sufficiently heavy to sink the pot into the water nearly up to the brim; there let it remain until the water penetrates through the sides. If four or five pots of different make were subjected to this simple experiment at the same time, their difference of porosity would be soon ascertained, and the best in that respect discovered. This porous quality is valuable, because it allows a considerable amount of fresh air to reach the roots through the sides of the pots, which is of great use in keeping the plants in health, and, whilst fresh air is being admitted, foul air can escape by the same means, and thus a circulation and a change of air is going on, where porous pots are used, that could not take place if the pots were not porous. The form of the pot is of some consequence; a section of a pyramid, inverted, is the best for several reasons, the chief of which are, that a greater surface of soil is exposed to light and air, and a greater facility is afforded by that shape of removing the plant from one pot to another. A child in gardening knows that if a pot was wider at the bottom than the top, and the plant had filled it with roots, it would not be possible to get the plant out of the pot without tearing the roots or breaking the pot. Now the most useful proportion is to have the width at the top and the depth both alike, outside measure; a pot six inches wide at the top should be, then, six inches deep;

the bottom should be, in that case, one-third less in width, that is, four inches, and these differences of size should be in the same proportion whatever the size of the pot may be. To strengthen the pots the makers put a rim round the top; some make it round, and others flat; the latter is the best, because it is not so easily, or so liable to be, broken.

T. APPLEBY.

(To be continued.)

THE KITCHEN-GARDEN.

ROUTINE WORK.—If showery weather prevails, continue occasionally to dredge the *Asparagus* plantations with salt. The spring-planted *Artichokes* should have some assistance with liquid-manure at this time to assist them in producing the autumn crop, which will be now about showing. *Cardoons* should also meet with the same treatment; some of the early crop should be earthed up, in order to blanch them for table. Keep the *Celery* well suckered and earthed in due season; and let the earth be well stirred about all late crops. Gather *Capsicums* and *Chilies*; and pot a few of the shortest jointed and best bearing *Chilies* for the winter produce. As soon as the *Onions* are harvested, manure and ridge-trench the ground in readiness for the early *Cabbage* crop. Sow *American* and *Normandy Cress*, as well as *Radishes*, in variety; and continue to plant *Endive* in full crop. Plant *Lettuce*; that sown at the commencement of this month, if now planted out in succession, will come in in readiness to store in frames, pits, or temporary shelters, for winter use. *Endive*, also, pricked for the next month to come, may be stored in the same way for winter and early spring use.

A fruitful variety of *Cucumber* should now be sown, or some cuttings struck, of any good sort that has been in bearing. If spare frames or pit-lights are at command, make use of them at once by taking a crop of *Dwarf Beans*. We produce the *French Bean* throughout the whole year by a little contrivance. This month we plant them in temporary turf-pits, which afterwards come into use for *Violets*, winter *Endive*, &c. When the nights get longer and colder, if we have spare lights, we put these over them; if not, some other temporary shelter: next month we plant inside of the *Melon* and *Cucumber* pits. In October we commence planting in pots, to be placed on shelves in the pine structure, and from that time until March or April they are cultivated in pots on shelves, in some of the forcing structures, when they are again, for two months, produced in pits, frames, and temporary structures, until they can be produced on warm borders out-of-doors.

JAMES BARNES.

MISCELLANEOUS INFORMATION.

ALLOTMENT FARMING—SEPTEMBER.

By this period, all those who have applied the necessary amount of perseverance in cultural matters, will be amply rewarded, both in the proceeds of their plot already available, and in the prospects of abundance through the coming winter. One serious drawback exists, and we fear it may prove general throughout the kingdom—the sad potato disease has again manifested itself; and here, at the period in which this is written, August 14th, with all the virulence which characterised it at a similar period, when the disease originally commenced. Many plans have been suggested to avert the severity of this evil, but we think the very best is to take up the crop the moment any blackness appears in the stem itself. We do not think that the crop

is so seriously endangered whilst the spot is confined to the leaf, but when the stems become infested, it is plain that the virus is fast taking possession of the whole system of the plant, root and all, and no positive gain can accrue to the crop thenceforward. People talk of leaving them in the ground to ripen after all the foliage has become blackened; but this is a very doubtful procedure. What is termed ripening, is doubtless effected through the agency of the foliage; and it is not likely that a half rotten and corrupted foliage can assist much in the elaborations which contribute to the ripening process. It is very good practice, according to our experience, to cut the haulm down immediately the leaves become, as it were, paralysed by the pro-

gress of the disease, and to earth the roots over about six inches deeper than they were with the soil from the alleys, or between the rows. The chief reason of this would appear to be, a better exclusion from the action of the air; for if taken up and laid on floors, as suggested by some, they speedily become unfit for eating; and if placed in pits, without great precaution, they ferment, and this fermentation seems to promote the spread of the disease at a prodigious rate.

As to the exposure of potatoes to the air, our London friends, who do not see a green field half-a-dozen times in the year, little fancy what splendid potatoes their country cousins enjoy. If the cockneys excel in their roast beef, and other substantial of a dinner table, we countrymen enjoy a counter-triumph in our potatoes.

Having lately spent a week in town, we can bear witness to the serious effects on the dining table, produced by the absence of really good potatoes, and the presence of bad ones. During some half-dozen dinners, and as many suppers, we could not meet with a single dish of good potatoes. Those produced, it is not quite certain that Lancashire or Cheshire pigs would eat; but, alas! both men and pigs are like spoilt children, in the potato way, in this part of the kingdom. Doubtless the bad name which London potatoes acquire, is owing to their exposure to the air; moreover, to make them look fine, they must be washed; and this course, by exposing their surface to a much increased amount of evaporation, must enhance the evil.

In pitting potatoes, or otherwise storing them, some use a layer of soil alternately with the potatoes, and this is not bad practice. We have a slight objection to it, as far as it may encourage the sprouting of the potatoes, and have been in the habit of using dry straw or litter instead. However, we have merely adverted to these things as a duty; many good plans, doubtless, exist in other quarters, the results of experience and observation.

The first thing we would fain ask of the allotment man at this period is, are your *root crops* all thoroughly cleaned? If not, you cannot hope for the full amount of profit derivable from such sources. Of course all plots from whence summer crops have been removed, are filled with either useful roots or greens of some kind; if not, it is too late for anything in the root way, and greens must be resorted to. It often happens that some overgrown plants remain in the seed beds, or that such are procurable; these are by far better than small plants at this late period. It matters not how large they are—the larger the better; for removal now will not injure them as it does during the heat of summer. Holes may be first bored with a crow, or poker, and then the plant fastened in the usual way; or they may be planted with the spade. The best kinds for late planting as to profit, are overgrown Green Kale, Thousand-headed Cabbages, or even the ordinary Cabbage. Swede Turnips planted after early potatoes, will now require a careful hoeing and cleaning. Some of the root crops, greens, &c., will, about this period, commence “bolting,” as common folks term it; and once a-week, at least, the cottager should collect all such materials for his pig, to which they are of much service, not only as to their fattening tendencies, but for the due regulation of his bowels. Many a man loses his pig through giving too much meat of a binding character. Half decaying leaves, too, from Cabbage, Mangold, &c., all assist in this way; but no *green* leaves may be pulled for some weeks yet.

ONIONS.—Where these have been sown in time, they will now be ripening, and should at once be bent down in order to hurry the process; for we want to hear of a crop of Coleworts, or very early Cabbage, being produced on the ground whence they are removed. If any portion of the onions are near ripe, and somewhat loose, they should be collected first; this gives the remainder a better chance of sun and air. In ten days' time, if the weather is pretty good, the whole may be removed to a high and sunny spot, and the ground slightly manured, dug shallow, say six inches, and a crop of Coleworts from the June sowing, planted at about one foot between the rows, and eight inches between the plants. The kind must be some dwarf sort; we use the Matchless entirely. It may seem strange for us to recommend shallow digging, but where manure is scarce, it is necessary in such “stolen crops,” for such we call them.

By these means a little manure goes a long way, and the Coleworts having a short period to remain, lay hold of the manure immediately. We would have such a crop bunched and sold in the market by Christmas. It is well for small holders to understand, that Onions will endure a vast amount of artificial heat; and that when they do not keep well, it is mostly owing to their not having been ripened well in the autumn. When the weather, therefore, is not good, we would place them in the warmest part of the kitchen if possible, until the necks are completely down and the coating fairly crackles. Perhaps the best plan, however, is bunching, or roping, and then they can be hung in any warm place if dry.

SHALLOTS will endure more heat still; some of the best kept we ever saw had hung in a cabbage-net, all the winter, overhead before the kitchen fire. In the month of June they were sound as a roach.

SCARLET RUNNERS.—These, if required for long bearing, should have all the overgrown pods picked clear away in the beginning of the month, as they rob the plants much, and may be given to the pigs. Runners require abundance of water to insure succession.

BROAD BEANS.—If any quantity remains on the plants, and a crop of greens exist between the rows, these may remain for seed; the surplus, even if not quite ripe, if dried, may be ground up with the pig meal. Indeed, the same may be said of Peas imperfectly ripened, Runners, &c.

CARROTS.—If the grub is busy, and the plants begin to flag, it is by far the best plan to pull them forthwith. Indeed, we are pulling a bed now, and they will keep well until Christmas; we shall, of course, use these first through the autumn, keeping the well-ripened for spring.

HERBS.—If any remain uncut, they should be cut forthwith. They will dry well in any outhouse laid thin, and when dry they should be stowed closely in boxes, covered down, and placed in a very dry situation. If this is too tedious, they may be bunched as cut, and hung against some dry wall in-doors.

PARSLEY will, perhaps, require thinning.

LEEKs.—May be earthed up as celery.

CELERY.—Earth a little when the plant is some size, and again in another fortnight. Both this and the leek require liberal waterings.

GREENS, BROCCOLI, &c.—All those planted early, say in July, will require well earthing. Lay it nearly as high as the plant can carry it, especially if liable to “club.”

COMMON TURNIPS.—Let these be well hand-hoed, and every weed destroyed. Leave them from six to eight inches apart, if of the garden kinds. It is certainly late, but we have before now sown Dutch Turnips on a warm spot and light soil in the first week of September, and obtained a nice crop for spring use. This was, however, in the neighbourhood of London.

SEEDS, &c.—All things available in this way should henceforward be watched and collected, if so doing does not compromise other business. We do not think that a cottager, or allotment man, ought to make a point of saving many seeds; it will not pay him so well as growing useful crops. Still it happens sometimes that a superior kind, or a row of Peas or Beans, or a few early Runners (for which a demand had not existed at the dinner table), may pass over their time, and serve to keep the seedsman's fingers out of his pocket. Above all, let us advise him still to be very particular about his seed Potatoes. Whatever the cause of the continuance of the disease, it becomes, at least, a necessary precaution to “breed well,” as it is termed, to preserve his stock as free from taint as possible. Indeed, the very constitution of the plant demands an amount of care in accordance with its natural habits. The abuse, or mismanagement of any plant, tuber, or otherwise, like abuses in the animal system, although not of a really destructive character at first, may, in a hidden way, be laying the foundation for positive disease; and such may *slumber* for a generation or two. Nothing like care: cause must produce its corresponding effect, whether seen or not; whether to-morrow or in a year's time.

And now let us turn our attention to *manures*. “The midden is the mither o' the meal kist,” say the Scotch; a sensible and useful proverb certainly. Would that every one who reads these remarks both could, and would, study

this text, and carry it out to the very letter. We have before stated that from the middle of August to the end of September, is of all others the best period to collect coarse vegetable matters; and it is almost needless to add, that anything of the kind increases the bulk and value of the manure heap. The very best way, as we think, to manage such things, is to char them, or, rather, smother them. Such materials are, of course, full of the seeds of weeds, and if these are not destroyed, better be without them. It so happens that this may be easily accomplished, and that without much sacrifice of bulk of material. Let all coarse herbage available be got together by the middle of September; and let all the ordinary weeds of the plot be also collected and kept by themselves; let there be also several barrowsful of soil laid close by, ready; any soil will do. Commence by making a small bonfire of sticks, &c., then add successive layers of the coarse herbage, until the mass is well kindled; and when the whole is piled up, and the process sure, add the weeds of the allotment, or garden, and finally a coating of the soil, beating the latter quite firm all over. To cause the whole to smoulder for a day or two, without bursting out, and to guarantee all parting of the interior of the heap, a heat of from 140° to 150° is the object sought; this will destroy both animal and vegetable life, and cause the smouldering mass to become a compost of much value, and of by far more bulk and utility than mere wood ashes; which by-the-by require some caution in their use on account of their causticity. When the process is complete, the whole may either be patted up close to exclude rain, or wheeled to the ordinary midden, and be turned with the riper portions, for early use next spring.

PIGS.—Now is the time, or during the next two months, in which a cottier, possessing a garden well cropped, may make the greatest progress with the least expense. Most who are thus fortunately situated, fat, at least, one good hog of some twelve stone yearly. Where a man possesses, however, as much as half an acre of land, something more may be done if he is a good cultivator. Of course his principal fattening period will be during October and November. By the end of September his hog should be large in "framework" at least, and roots and surplus stuff thenceforward come to hand abundantly. If he finds that there is a prospect of more stuff than one hog can manage, it will be good policy forthwith to purchase, if tolerably cheap, two or three little half-bred Chinas, or porkers; these will serve to keep him from his bacon rack for many weeks. Such pigs should have a little size to commence with, say about three stone, and these he may feed with little trouble and expense. We would knock up a temporary cover, an old door would do, in a warm corner, possessing a sound bottom, and give the pigs a dry bed. The mere garbage from the garden, with some small Potatoes, would suffice, with the addition of a little hard food once a day; the latter might be Peas, given whole every mid-day; and plenty of water to drink would complete the diet: above all, insuring them a dry and clean bed. There would be no cooking required here, so that the regular hog feeding would not be compromised in any way; they might form a separate establishment. In a few weeks he might kill or sell them, and would have nice pigs of seven or eight stone. To be thus successful, however, it is indispensable that the pigs should be of a "prick-eared" breed. We should prefer half-bred Chinas. By such means, too, the manure heap will be augmented—by no means a trifling matter.

R. ERRINGTON.

APIARIAN'S CALENDAR—SEPTEMBER.

By J. H. Payne, Esq., Author of "The Bee-keeper's Guide."

HONEY SEASON.—This season may certainly be pronounced a very indifferent one, and in some localities a very bad one (in this, Bury St. Edmund's, especially so), for a good glass of honey, or, indeed, a glass of honey at all, has very rarely been obtained; and this is attributable chiefly, I imagine, to the coldness and lateness of the spring, which greatly retarded the increase of population in the hives, so that for the few days early in June when honey abounded, there were comparatively no bees to collect it, therefore, those persons in whose stocks very early breeding commenced, have honey, and *only* those. A bee-keeper to some con-

siderable extent, residing on the southern border of Norfolk, tells us that his whole supply of honey this year has been from his *May* swarms, each of which has afforded him a good average quantity, both in glasses and boxes; whilst those of the middle of June will not gather, he fears, a sufficient supply for their winter's consumption.

EARLY BREEDING.—In our fitful climate this is a most important thing to effect, and every possible means for promoting it should be used. Therefore, in addition to what I have already said in the calendar for last month, viz., leaving the stocks rich in store, as well as in bees, I would now say, keep the stocks as cool as possible till the end of February, and if, as has already been said, that cold retards the hatching of the brood, warmth may be supposed to promote it. I would therefore recommend, where it is at all practical, at the end of February to increase the temperature of the hives, by defending them externally from the cold of March and April, by any means that may the most readily be had recourse to for the purpose; perhaps binding the hives neatly over with hay-bands would be as little trouble and inexpensive as anything. I intend, for the sake of experiment, to place two or three hives in a greenhouse, in which the temperature will never be suffered lower than 32°; and in March and April uniformly eight or ten degrees above that point.

SHADING.—It is very desirable to shade the hives from the winter's sun, for the bees are not unfrequently tempted thereby to leave their hives, never to return.

STOCKS FOR NEXT SEASON.—The time will soon arrive for setting apart stocks to stand through the winter. Each one intended for this purpose should be made to weigh from twenty to twenty-five pounds, and the bees of all weak or very old stocks, the hives of which are decaying, so as not to stand with safety through another season, should be *driven* to those that are the least populous in the apiary; for it must be remembered, that not only a good store of provision, but that a large quantity of bees also, is necessary to secure success for another year.

DRIVING.—For performing this operation, as well as for almost all others, I very much prefer the middle of a bright day to any other time. The process is very simple, and may be effected in a few minutes. I very much wish that I could persuade all my cottage friends to adopt it, instead of the cruel and wasteful method of "*burning*;" for in weak stocks the bees themselves are frequently of as much value as their little store of honey and wax, and by joining them to other stocks, very considerable advantages arise. My method of driving is this: On a bright day, between eleven and one o'clock, turn the hive from which the bees are to be driven bottom-upwards, in a shaded corner of the garden, and place upon it a hive of the same size; see that they fit closely; and to make the junction more complete, tie a cloth round the hives where they meet. Then, with two sticks, keep up a gentle but continuous tapping upon the sides of the inverted hive for about ten minutes; the bees will by that time have left it and gone into the upper one. Having ascertained that fact, take it immediately to the place where the driven hive was taken from, and place it upon the same floor-board; carry the driven hive fifty or sixty yards away, and place it upon a fresh floor-board: the few bees that remain in it, as well as those that are out at work, will return to the driven bees. All is now finished until an hour after sunset (except emptying the driven hive of its store), when two sticks may be laid upon the ground about eight inches apart, opposite the stock to which the driven bees are to be joined; then with a smart stroke dash out the bees between the sticks, and instantly, but *very gently*, place the stock they are intended to enter upon the sticks; leave them for the night, having first defended them from rain should any fall, and in the morning, an hour before sunrise, replace the stock in its original position, and all will be peace and harmony. Here then will be an increased population—a stock thereby enabled to stand through the winter much better, and to send out a much earlier swarm (if swarms are desired) than if the union had not been effected.

WASPS.—It will be well to destroy wasps'-nests in those localities where they are to be found. For myself, I have seen only one worker-wasp this summer (now the 12th of August), a most unusual thing; and I have always found

that when there are but few wasps, it proves a bad honey-season.

TRANSFERRING BEES.—Notwithstanding what I have already said on this subject at page 54 of the present volume of *THE COTTAGE GARDENER*, I am continually applied to for the best method of effecting it; and I can only say, as I have already done, that I never recommended it, nor ever practised it, and for this simple reason, that wherever I have seen it, or heard of its having been done, in nine cases out of ten the stock transferred has either been killed at once, or so weakened by the process as never to become of any value. Let the bees remain in their present hives, let them swarm next year, put the swarms into the hives most desired, and in the autumn *drive* the old stocks, and unite them to the swarms.

TRANSACTIONS OF THE HEN-YARD—SEPTEMBER.

COCHIN-CHINA FOWLS.

WHEN I first mentioned Cochin-China fowls, it was quite my intention to have confined my remarks to a single article, and now I find myself commencing a *third* on the same subject; it is, however, I hope, one which is interesting to many persons, and one, moreover, which has, at present, been so slightly treated of, that I trust this lengthiness will not prove unwelcome to those who take an interest in choice poultry.

The chief circumstance in which the management of the Cochin-China fowls differs from that of the lighter varieties, is their roosting. It is not well to allow these heavy birds to ascend to a high perch, for those which do so almost invariably get deformed in the breast-bone, and this, if it increases to any great extent, becomes very unsightly, even supposing it should not interfere with the health of the fowl. When a hens' ladder is placed against the perches, the fowls will make use of it in mounting to roost, but in coming down they almost always use their own wings alone. Many persons attribute this crookedness in the breast-bone to mischief sustained in these hasty descents (which are often as bad as a fall), but I am inclined to think that it proceeds rather from the great weight of the fowl bearing upon one point for so many hours together; if this is the case, either high or low perching is likely to be injurious, but be this as it may, high perching is proved to be so to heavy fowls. Some persons give them broad perches near to the ground, but I should recommend, in preference, a bed of straw, either on a wooden platform, or in a basket so large as to avoid any danger of injuring the plumage. This straw must be shaken up and cleansed every day, and renewed once a-week, or oftener, if necessary. The purchase of this straw occasions an additional outlay of money, but this will be found no loss to those who have even a small garden, as the rotted straw mixed with fowls' manure forms a valuable addition to the manure heap. In making these remarks, I refer to fowls which are kept without the appliances of a farm-house or country residence.

It is almost superfluous to mention that where size is so much a consideration, high feeding is very necessary. Where common poultry are fed twice a-day, it is desirable to feed the Cochin-China three or four times, and to give the food so abundantly, that some may be left after the fowls have satisfied themselves. They will very gladly eat the same food as other fowls.

In speaking of young chickens, in *THE COTTAGE GARDENER*, during the earlier months of this present year, I have recommended so much care, that the same treatment will answer applied to Cochin-China chickens. I have often been asked the question whether they give more trouble, or require more care than the commoner kinds? The true sort is at present so rare, that, I believe, the few persons who keep them do so chiefly for the fancy, and so, being desirous of realizing the greatest attainable excellence both in size and breeding, bestow much cost and attention upon them; but when the time shall arrive (and I trust it is not distant) when every cottager may possess his Cochin-China cock and hens, I know no reason why these may not be kept quite as easily as the common barn-door fowls. *Only let the breed be kept pure*, and if they do not attain the size at which they now arrive under the care of persons who wish to raise from

eight to twelve pound birds, they will get, at least, double that of our common poultry (I speak within bounds) and, certainly, double the number of eggs.

I have not found the Cochin-China fowls more delicate than our own, and the chickens are quite as easy to rear. I have sometimes found cross-bred chickens very delicate, very subject to roup, and very difficult to raise; but I have never experienced this trouble with the true sort: they are, on the contrary, nice, thriving, hearty, and hearty feeding chickens.

Before concluding this subject, I must offer some explanation of one passage in my article of the 31st July last; for as I know that my words have been misunderstood by one reader of *THE COTTAGE GARDENER*, I fear they may also mislead others. In speaking disparagingly of some so-called Cochin-China fowls *bearing marks of a cross of Malay*, I would not, on any account, be understood to allude to some true-bred Cochin-China fowls of a *somewhat Malay-like* height and bearing, but which are quite pure Cochin-China fowls notwithstanding, although not so handsome, to my fancy, as the more square built variety.

In these observations on the Cochin-China fowls, it has been my endeavour to render my descriptions clear, even to those who may be as ignorant both of the kind of fowl, and the deceptions frequently practised upon their unluckily purchasers, as I was myself when I commenced the same pursuit. If in this endeavour I should have failed in any point, I shall be most happy to reply to the inquiries (through the courtesy of the editor of *THE COTTAGE GARDENER*) of any reader of these papers who may find himself in want of information, reminding him, at the same time, that as I try to avoid writing from hearsay, I have but the experience of one person to offer. ANSTER BONN.

ANTIRRHINUMS.

THOSE, like me, who are fond of mixed flower-borders, and who grow chiefly hardy, showy perennials and biennials, with an intermixture of the best annuals, need never want for flowers. I reckon a garden is not worth having, if it does not look gay nine months out of the twelve. To such, I would particularly recommend one flower, which is deserving of more general and better cultivation: I allude to the antirrhinum. This has been a favourite with me for some time; and about two years since, I purchased a packet of seeds of B. W. Knight, St. Leonard's, near Hastings, Sussex. They were stated to have been saved from seventy choice-named varieties. I sowed them in a bed by themselves, and no collection could come finer; when in bloom, the best flowers were marked and hybridized, and this year there was such a gorgeous display of sorts and colours, as I never saw before,—very many are beautifully variegated and striped, like carnations, and they grow from one to six feet high: some of the spikes are two feet long, with lateral branches of flowers from the root up to the bottom of the spike. One advantage of such a bed (and the Shrubland Gardens cannot produce a richer) is, that you can select from it any flowers you wish (except blue) to ornament the borders. *Apropos* of blue, my neighbour grows the *Linaria ornithora* (tricornithophora?), a sort of long-tailed snapdragon, and amongst her collection are blue flowers. Query, will the *Linaria* and *Antirrhinum* hybridize? if so, we may get into blues. A friend of mine has the double red; I have the double white, and one yellow, the two stamens of which have pushed into petals, and if the pistils should follow, they will be the only three double flowers that I know of. All my experience in *Antirrhinum* culture (and much of it is only a confirmation of what has been already written in *THE COTTAGE GARDENER*) amounts to this:—

1. The flower hybridized *upon* produces *form*.
2. The flower hybridized *with* gives *colour*.
3. Red and yellow flowers produce orange.
4. The oftener the crossings are made between the striped flowers, the richer are the markings.
5. The male stamens of the flower hybridized, should be cut out.
6. The more the plants are hybridized, the more difficult it is to raise the seed.
7. Plants from hybridized seeds and cuttings are tenderer

than whole coloured ones, and require protection the first winter.

8. Hybridized seed cannot be depended upon to produce always striped flowers; the slips *may*, but both have a tendency to return to the colour of the original parents.

The seed should be sown in autumn, as soon as it is ripe, upon a bed previously well dug and watered, and be scattered thinly, and not covered with mould. If left till the spring following, they will be much longer in vegetating. I have still seeds coming up on a bed that was sown last year, and from which plants were successively removed. I mention this, that the bed in which choice seeds have been deposited, may not be too hastily broken up. It is a mistake, as many suppose, that lime-rubbish or a poor soil are most favourable to the growth of high-coloured or striped flowers; my best plants grow on rich soil. Finally, the latest and weakest seedlings generally produce the best flowers.—S. P.

TEMPERATURE, AS INFLUENCING THE GROWTH
OF THE WHEAT PLANT.

By Cuthbert W. Johnson, Esq., F.R.S.

THE close connexion existing between the temperature of a district and the successful cultivation of any particular crop, was an early and popular observation of both the gardener and the farmer. Every traveller had this knowledge forced, as it were, upon his attention. The intelligent gardener, as soon as he began to cultivate plants not indigenous to the soil, acted as well as he could in accordance with this knowledge: he placed the plants in shady places—he protected them from exposure to a temperature and a degree of moisture foreign to their natural habits. In these latter times, however, the farmer has had the advantage and assistance of the meteorologist to guide him to similar conclusions—to aid him in his choice of sites and soils for the most successful cultivation of his crops. This knowledge would be both refreshing and salutary, even if it only served to add to the abounding interest of the natural phenomena of rural life, and did not directly tend to still more substantial benefits. The research is full of increasing interest, and this field of enquiry enlarges rapidly upon us as we proceed. To avoid, then, the temptations of deviating from such a portion of our subject as may be included within the limits of THE COTTAGE GARDENER, let us strictly confine ourselves on this occasion to a few meteorological observations on the effect of temperature upon the growth of the wheat plant, leaving to other opportunities a multitude of equally interesting and kindred enquiries.

As I had occasion to remark in another work (*Farmers' Almanac*, vol. v., pp. 30—54), after referring to a valuable prize essay by Mr. N. Whitely (*Jour. R. A. S.*, vol. xi., p. 1), as a general rule, when the mean temperature of a district is the highest, there the corn produced is the best. The mean temperature of Edinburgh is 47; Keswick, 46; London, 51.9; Philadelphia, 52.5; Cairo, 73. The effect, then, of increase of mean heat is to improve the value of the corn; but there are many causes which modify and vary this general rule. The great heat of a Polish or Russian summer, for instance, more than compensates for its shortness. The length of the days of a northern summer, by giving the extra stimulus of light, also materially aids the rapid maturity of the crop. Amongst the retarding influences must be classed the elevation of the land. From the observations of Schubler, in Saxony, he drew the conclusion that every 98.26 feet caused a delay in the harvest of wheat, barley, and oats, of 2.2 days. In our climate, all other things being the same, we think that nearly a similar rule of retardation is observable; but here, again, many circumstances cause a deviation from the rule—such as the nature of the soil, and more especially the subsoil, and the more or less rapid *rate* of elevation. The harvests on gravelly or silecious soils are much earlier, and those of clay soils much later, than our calculations with regard to the climate or elevation would justify. The harvests, for instance, on the grit-stone or moorlands of Yorkshire, at an elevation of 500 feet above the level of the sea, are always later than on its Chalk Wolds at 800 feet. We may, perhaps, take it as a general rule,

that all land in England, at an elevation of 1000 feet above the sea, can only be profitably employed in pastures. The line of extreme cultivation rises gradually as we approach the equator. In some of the Steppes of the Himalaya, barley is successfully cultivated at more than 14,000 feet above the level of the sea; wheat up to 12,022 feet—the height of our highest mountains is only about one-third of this—Helvellyn is 3,055 feet; Ben Macdui, 4,148; Macgillcuddy in Ireland, 3,410. The result of Mr. Kirwan's observations was, that in moderate rates of elevation above the level of the sea, such as the rate of 6 feet per mile, for every 200 feet of elevation the mean annual temperature would be reduced $\frac{1}{4}$ of a degree; that if the rate of elevation was 7 feet per mile, $\frac{1}{3}$ of a degree must be allowed; if 13 feet, then $\frac{1}{2}$ of a degree; and if at the rate of 15 feet or upwards, then $\frac{2}{3}$ of a degree must be allowed. In rising above the level of the sea, the mean temperature gradually decreases, until at length we arrive at the line of perpetual snow. The following scale gives the height of the line of congelation in feet, and the mean temperature at the level of the sea, in different latitudes (*Banfield and Weld's Stat. Comp.*, p. 8) :—

Barometer.	Thermometer.	Alti. in Feet.
23.50	28	6,552
19.0	46	13,044
14.70	25	19,303
0.30	18	20,352

In some observations made during balloon ascents by Mr. Rush, it appeared that in May, 1837, the thermometer being 60° when the barometer stood at 30 inches, that the following changes took place during the ascent (*Athenæum*, 1849, p. 1016) :—

Lat.	Congela.	Temp.	Lat.	Congela.	Temp.
0	15,207	84.2	50	6,334	53.6
5	15,095	83.8	55	5,034	49.2
10	14,764	82.6	60	3,818	45.0
15	14,220	80.7	65	2,722	41.3
20	13,478	78.1	70	1,778	38.1
25	12,557	74.9	75	1,016	35.5
30	11,484	71.1	80	0,457	33.6
35	10,287	67.0	85	0,117	32.4
40	9,001	62.6	90	0,000	32.0
45	7,671	58.1			

It would appear from some balloon observations of Mr. Gay Lussac, that the temperature of the atmosphere decreases 1° for every 352 feet of elevation. Temperature, we all know, materially influences the system of cultivation adopted even in different districts of our islands. It may be useful, then, if we examine the records kept in 1847 and 1848 at three stations in corn-growing districts, viz., London, Thwaite in Suffolk, and Thetford in Norfolk, and contrast them with the register kept at Falmouth, Exeter, Manchester, Whitehaven, and Durham (all pasturage localities), and note the mean monthly temperature of these places during the corn-maturing months of June, July, and August. The following are the results (*Gardeners' Almanac*, by G. W. Johnson) :—

CORN DISTRICTS.—1847.				
	<i>June.</i>		<i>July.</i>	<i>August.</i>
London	59.5	..	65.8	63.7
Thwaite	59.1	..	65.9	64.2
Thetford	62.5	..	72.0	69.5
	<hr/>		<hr/>	<hr/>
Mean of 3 stations	60.0		63.6	65.8
1848.				
London	59.76	..	62.98	59.71
Thwaite	60.37	..	63.97	62.39
Thetford	64.5	..	70.00	63.00
	<hr/>		<hr/>	<hr/>
Mean of 3 stations	61.54		65.4	61.7
PASTURAGE DISTRICTS.—1847.				
	<i>June.</i>		<i>July.</i>	<i>August.</i>
Falmouth	56.9	..	61.9	58.1
Exeter	58.9	..	63.9	62.4
Manchester	58.4	..	64.9	60.3
Whitehaven	57.7	..	63.2	58.8
Durham	55.7	..	61.5	56.5
	<hr/>		<hr/>	<hr/>
Mean of 5 stations	57.5		63.1	59.2
1848.				
Falmouth	57.64	..	60.35	57.93
Exeter	58.42	..	60.76	58.76
Manchester	59.48	..	61.44	59.73
Whitehaven	57.56	..	59.87	59.87
Durham	58.96	..	59.14	57.26
	<hr/>		<hr/>	<hr/>
Mean of 5 stations	58.4		60.3	57.3

These facts will, I hope, be useful to many of the numerous readers of this journal, few of whom are so placed as to be indifferent to the influence of temperature on the plants around them; and we may be well assured, that we shall yet reap larger harvests in this branch of science—observations which will at once enrich and elevate the cultivator of the soil.

ENGLISH CAGE BIRDS.

(Continued from page 280, vol. v.)

THE GOLDEN-CRESTED WREN.

INSESSORES DENTIROSTRES. SYLVIADÆ INSECTIVORA.

Sylvia Regulus; *Motacilla Regulus*; *Regulus Cristatus*; *Regulus Auricapillus*; *Regulus Vulgaris*; *Sylvia Auricapilla*. Golden-crested Wren; Golden-crested Warbler; Golden-crowned Wren; Gold-crested Kinglet.

THIS is the smallest of our warblers, and, in fact, of European birds; it is an elegant and lively little bird, ever restless, ever active, and is capable of enduring our winters better than many of our larger birds. It is generally to be found in wooded districts, especially where fir trees abound, when it may be seen flitting and poising itself on the wing in search of insects beneath the branches. Its nest is one of the most beautiful things in nature, generally suspended by three or four silken cords from beneath the branch of a fir-tree, most ingeniously contrived to elude the search of the most vigilant naturalist; moreover, the female is not very easily disturbed; so confident and secure she feels, as to allow a pretty close inspection; and the nest being usually placed at the extremity of a branch, the opportunity of watching (when the nest is discovered) is more easily attained. She lays from eight to ten eggs, and has been known to give her attention to her nest of eight young ones thirty-six times in an hour, and this continued for sixteen hours in the day. It is related by the Hon. and Rev. W. H. Herbert, in the work of Neville Wood, Esq., on "British Song-Birds," "that he once caught half a dozen of these birds at the beginning of winter, and they lived extremely well upon egg and meat, being extremely tame; at roosting time there was always a whimsical conflict amongst them for the inside places, as being the warmest, which ended, of course, by the weakest going to the wall. The scene began with a low whistling call amongst them to roost, and the two birds on the extreme right and left flew on the backs of those in the centre, and squeezed themselves into the middle. A fresh couple from the flanks immediately renewed the attack upon the centre, and the conflict continued until the light began to fail them. A severe frost in February killed all but one of them in one night, though in a furnished drawing-room. The survivor was preserved in a little cage by burying it every night under the sofa cushions; but having been one sharp morning taken from under them before the room was sufficiently warmed by the fire, though perfectly well when removed, it was dead in ten minutes." Its song is very soft and sweet, but in rather a low tone; so that one must be very near to hear it. Its food consists of small winged insects and their larva, and occasionally, it is said, a few seeds or berries. I once obtained a nest of young birds, pretty well feathered, which I placed under a hen canary which was sitting on her nest of eggs, these being distributed to other nests; the canary took readily to the young gold-crests, and fed them and brought them up until they could provide for themselves, which they did in a short time, subsisting on the egg and bread as made for young canaries, bread and milk, and hempseed, eggs and meat, and raw meat chopped small. They are very difficult to keep in health; but it is a very pretty object to see these little creatures seeking their food on a little fir-tree, planted in a pot, and placed in the aviary, which is the mode I have usually adopted for them.

THE FIRE-CRESTED KINGLET.

INSESSORES DENTIROSTRES. INSECTIVORA SYLVIADÆ.

Regulus Ignicapillus; *Sylvia Ignicapilla*. Fire-crested Wren; Fire-crested Kinglet.

THIS species is by no means numerous; it is of recent discovery, not being known to the older ornithologists. Yarrell speaks of its being first made known in the year

1832. It has been considered by some to be only a variety of the common Gold-crest, but ornithologists of the present day allot to it a separate title. In "Wood's British Song-Birds" Mr. Edward Blyth says, "I am very much mistaken, indeed, if I did not discover the Fire-crested Kinglet in the neighbourhood of Worcester, among the aboriginal yews, which twisted their antique boughs in sombre grandeur upon a sandstone precipice overhanging the Severn. Unfortunately I had no gun with me, so failed in the endeavour to procure a specimen; but the locality is noted for the future." If this bird is procured, I have no doubt it could be kept as readily as the former.

THE REDSTART.

INSESSORES DENTIROSTRES. INSECTIVORA SYLVIADÆ.

Sylvia Phœnicurus; *Motacilla Phœnicurus*; *Phœnicura ruticilla*; *Curruc Phœnicurus*; *Phœnicura Albifrons*. The Redstart; The Red Warbler; The Redtail; Tree Redstart.

THIS is one of our summer visitors, arriving from the south about the second week in April. It is remarkably handsome when in full plumage, the colours being very striking; it is often conspicuous on the topmost branch of low trees, and sometimes even the lofty elm, singing its soft and melodious notes, and occasionally singing while on the wing, as it flits from tree to tree. It has been observed, like other birds gifted with the power of song, to be an able imitator of the notes of other birds, and when brought up from the nest may be taught, like the bullfinch, to whistle tunes. "Mr. Sweet observes, when speaking of this bird, that he had one in his possession which learned to sing the Copenhagen Waltz, that it had frequently heard sung, only it would sometimes stop in the middle of it and say *chippit*, a name by which it was generally called, and which it would always repeat every time he entered the room where it was, either by night or day. In winter it would generally begin singing in the evening as soon as the candle was lighted, and would often sing as late as eleven o'clock at night." Some few years ago, I remember having a male-bird just caught brought to me, which I put into a cage in which I was rearing some young whinchats and stonechats, when to my astonishment, in the course of a few hours, I found this fresh-caught bird most diligently and constantly feeding both the whinchats and stonechats, so that all trouble ceased with me and devolved upon him, and he continued to feed them until they could provide for themselves, and thus saved me a double difficulty, by attending to himself as well as the young birds. They may be kept readily in confinement, being fed upon the same description of food as the nightingale, which has been already described. In the autumn, which is their moulting time, they frequently die; probably from the food supplied them not having sufficient material to supply the demand for forming new feathers. If you succeed over the moulting time there is no difficulty afterwards. I have usually brought up the young birds from the nest on the food already mentioned for nestlings of former birds, but birds caught are preferable as being stronger, and you have your song as soon as they become reconciled to their new food. The natural food of this bird consists of different kinds of insects and their larva, caterpillars, currants (of which they are very fond), raspberries, elderberries, &c. Any of these procured and put into its cage, is sure to be seized upon very readily, and, therefore, it is desirable to do so as often as may be. W. RAYNER.

[Want of space has alone been the cause of interrupting the publication of these trustworthy papers. We hope now to insert them regularly.]

BREWING.

As a practical brewer of some years' experience, I cannot say that I quite like the receipts you gave in your very valuable periodical some time since. The following is my plan, and better ale than some which is now in the cellar, and has already been twelve months in the cask, no one need wish to drink. I brew two days at a time. I begin, then, *a la* Mrs. Glass's plan, of "first catch your hare, then kill it," &c. I order in all the material for the brewing at once, viz., one quarter of the best pale malt, one hundred-weight and a quarter coarse moist sugar, and fourteen pounds best hops. As to water, I have 320 gallons of pure

rain-water expressly for the *wort*. And here let me urge on all private brewers, if they possibly can, to use rain-water. If they have been in the habit of using spring, or even river water, let them but give rain-water a trial, and I can almost venture to say they will never give it up again.

On the evening previous to brewing-day the copper-fire was lighted, and made up before retiring for the night, in order that the water might be of a proper temperature early next morning. At a few minutes before six A.M. operations commenced in real earnest. Ale alone was to be brewed on the first day. Four bushels of malt were gradually but thoroughly stirred into forty gallons of water with the mashing-bar, great care being taken that no "balls" were formed in the mash-tub. (The malt is apt to form into small round balls, if not carefully mashed; and as the inner part of these balls is not exposed to the action of the water, considerable loss may be occasioned.) The temperature of the water 170° Fahrenheit.

By half-past six the mash was complete, and then the mash-tub was covered over, and all left to stand quietly until nine, when the first wort was run off, and poured into the boiling copper as soon as possible, in order that no heat might be lost unnecessarily. The few first pailfuls will perhaps contain a considerable portion of malt; these should be poured back into the mash-tub until the wort runs tolerably clearly. Half-a-hundredweight of sugar, and four pounds of hops, were put into the copper with the wort. A second mash was then set as before, save that the water was 180° instead of 170. After leaving this to stand for an hour and a-half, it was also run off, and the boiling copper filled up, and the wort in it boiled up as soon as possible. After boiling rather more than an hour, the copper was emptied, the liquid being poured into coolers through a wire sieve, that the hops, &c., might be retained, and left till the temperature was reduced to about 70°. It was then put altogether into the working vat, a little yeast added, and so set to work, and the brewing of the ale completed. A third mash was obtained just as the second, though this was not put into the copper, but retained for the morrow's brewing. The grains were then washed with a few pails of water, which served for part of the water for the first mash of the following day.

Operations for the second day, on which I brew table-beer alone, proceeded just as on the first day, save that as *quantity* instead of *quality* was the object, the mashes were made with fifty gallons of water each, and I had thus three boilings instead of one: the first boiling consisting of the *third* mash of the day before, and the first mash of the morning; the second of part of the first mash, and the greater part of the second; the third of the remainder of the second, the whole of the third, and the washings of the grains. These three boilings were all ultimately put together, and will form, I doubt not, when tapped, a very excellent table-beer. I should mention that three-quarters of a hundredweight of sugar were used on the second, instead of half-a-hundredweight, as on the first day. A few camomiles, say one pound to the quarter of malt, will give a very pleasant bitter, resembling the far-famed bitter ale. The sugar should be well dissolved in wort previously to being put into the copper.

The whole outlay, firing and all included, I calculate at about £6 10s.: and for this I have upwards of 240 gallons of sound excellent beer; or rather, 60 gallons of *strong* ale, and 180 gallons of very *good* table-beer. It will thus be seen that the cost of the whole brewing averages about sixpence halfpenny per gallon; or about what I should pay for a single quart of adulterated stuff at a public house. I cannot buy it at the brewhouse under 10d. a gallon: thus I am in every way a large gainer. The trouble is not much; one brewing supplies us nearly for a year.

Of course, the materials being in the same proportion, a much less quantity may be made. Next time I shall, perhaps, only brew four bushels of malt, and this will serve my family, together with the present brewing, for a full year. Should any of your correspondents wish for further information, I shall be happy to answer their questions as far as I am able.

YOUR CORRESPONDENT IN KENT.

[October is the best month for brewing, and we find that the foregoing was intended for publication in that month last year. It is not at all necessary to use any malt, and we

can state, that some of the best beer we ever tasted, and are still in the habit of tasting, is made from sugar and hops only, according to the directions given at page 181 of our fifth volume. Even a cheaper substitute for malt than sugar may be found in the *parsnip*; and Mr. J. Alford, gardener at Bedworth Rectory, near Coventry, says, that a most superior beer is made by using one gallon of parsnips to every four gallons of water. "The parsnips must not be scraped nor peeled, but be taken fresh from the ground, well washed, boiled down to a pulp, the hops added and boiled, and then the whole strained, cooled, and worked with yeast."—ED. C. G.]

THE DOMESTIC PIGEON.

THE DISEASES OF PIGEONS.

(Continued from page 248.)

THE RATTLING is only the symptom of a hidden disease, which we must try to discover and cure. It most frequently indicates an inflammation of the gullets. In this case the bird must be deprived of all salt, or nitrous food and drink; it should be bled a little in the foot by cutting a nail, as we have said in the article on *apoplexy*, and afterwards subjected to a cooling diet, such as barley and pure water. When the rattling comes in extreme old age, it is the unequivocal sign of death.

ASTHMA particularly attacks the Pouters. It is recognised by a difficulty of breathing announced by the very painful heaving of the flanks at every respiration. It may proceed from several causes; such as great inflammation caused by food too exciting; in this case it may be cured by a cooling diet. 2ndly. From venereal exhaustion. We then give canary and hemp seed in small quantities, and salt; the bird must be kept shut up alone, in a place from whence it cannot even see any females. 3rdly. If from an exhaustion occasioned by deglutition, after having nourished several young pigeons, it is treated in the same manner, but we add to its diet a little astringent water, that is to say, slightly impregnated with alum. 4thly. Lastly, the asthma may also come from the infirmities of old age, and then is incurable; but in all cases its cure is tedious and difficult.

WORMS sometimes attack these birds without our being able to tell the cause that produces them; they are nearly an inch and a-half long, and a quarter of an inch thick, the body is cylindrical, terminating at both ends in a point, of a livid white; they are gathered together in a packet more or less large, near the orifice of the fundament. Some amateurs fancy they have remarked that pigeons which drink the water from pits or springs, are more subject to them than those which satisfy their thirst with river water. The only remedy from which we have perceived the slightest efficacy, is to administer repeated injections of sweet almond oil (spirit of turpentine is more effectual).

CONTAGIOUS DISEASES.—It sometimes happens that all at once we see the pigeons, not only of one dovecote, but even of a whole town or province, die in succession, without being able to trace it to any cause. These kinds of pestilence most frequently result from some pernicious food that chance or other circumstances have placed in their way. A few years ago people were greatly surprised to see, at Montdidier, almost all the pigeons of the town and its suburbs die suddenly. M. Landormy, a physician at Amiens, discovered the cause of it in some vitriolic ashes that had been scattered in a field, which these birds had pecked, because they had a little taste of salt in them. The amateur who fears a contagious disease, can take no other precaution than that of closing his dovecote, and keeping his birds prisoners.

The best means to prevent diseases is that on which the amateur ought to reckon most, namely, to keep the dovecote clean; to have it built in a dry and airy place, and to give the pigeons cooling food adapted to their nature. It is always better to prevent disease than to cure it; for the blood of pigeons is very warm; consequently the progress of their complaints is very rapid, and, frequently, after only a few hours it is already too late to stop their course.

THE DOVE-HOUSE.

By this word we understand the residence prepared to lodge the stock-dove pigeons, with which the profits of a farm, or other rustic property, is increased. *The aviary*

is the habitation destined to rear fancy pigeons, but both may be included under the name *pigeon-house*.

Pigeons, and particularly the stock-dove, are timid birds, loving liberty and tranquillity. The noise of a poultry-yard or frequented place disturbs them, and quickly determines them to forsake it; the frequent detonation of fire-arms, the simple whistling of the wind through the leaves on high trees, are sufficient to make them forsake it. We shall do well, then, to establish their residence in a place rather separate. This is to be understood with regard to the stock-dove, for the other races accustom themselves more or less easily to the inconveniences of a frequented place, or a yard inhabited by other fowl and cattle.

The dove-house ought to be placed in a dry, healthy, and open place, about four or five hundred steps from any habitation, exposed to the east, and in a situation where the pigeons can enjoy the first rays of the sun. "I have seen," says Buffon, "the pigeons from several dove-houses situated at the bottom of a valley leave them before sunrise to gain a dove-house on the top of a hill, and flock there in such numbers that the roof was entirely covered with these strange pigeons, for which the inhabitants were obliged to make room, and even sometimes to give place." It should not be near any great trees or woods; because, as I have before said, pigeons are very fearful of the noise made by the rustling of the leaves, and still more so of the ambuscade of birds of prey, or the proximity of places inhabited by the greatest number of their enemies. Finally, it should be built on an elevation, that the young pigeons may easily perceive it, and direct their flight to it when they would return after their first issuing from it.

When once a convenient place has been chosen, as much as possible in a country cultivated with wheat and small corn, erect the dove-house in the middle of a piece of ground, or even a meadow, in whatever form we may have determined on, whether round or square, or any other shape. However, the round form is preferable, from the facility it gives us to visit the nests by means of a swinging ladder, the description of which we shall give in the article entitled, "Utensils of the dove-house and dovecote." We may also, if we feel inclined to follow the advice of Messrs. Boiste and Parmentier, have a window with a close wirework, to which a trap-door is fixed proportionable to the size of the pigeon. But this method appears to have its inconveniences; first, it allows the cold, dampness, and hoar frost of winter to penetrate during the night; and then when the pigeons are pursued by a bird of prey, they flock into the dove-house altogether, where their enemy dare not pursue them. This they could not do, if the opening was only sufficiently large to admit one at a time. When the dove-house contains a troublesome male, he places himself in ambush at this narrow door, and prevents the others from entering, which is always very prejudicial, because it frequently disarranges the regularity of incubation. "We should," add these authors, "always keep it open, and not subject ourselves to open and shut it night and morning, for if we once happen to forget it, the pigeons could not get out; then the young ones for want of food, since they have none but what their parents seek for them in the fields, would infallibly droop and die." We shall here give a diametrically opposite advice, for everybody knows the small voracious animals, such as the polecat, weasel, &c., choose the night for seeking their prey. In spite of all the precautions we may have taken to prevent the possibility of their climbing to the window, sooner or later profiting by some circumstance that chance or negligence has supplied them with, such as a ladder, a pole, or merely a stick placed against the wall of the dovecote, they will penetrate into it, which they can do by means of a rope, and in one hour destroy half, or perhaps the greater part of the pigeons. It is also during the night that nocturnal birds of prey seek their food, and, as has frequently happened, they would not fail to enter and seize their prey. Besides, those persons who will not subject themselves to take care of animals, ought not to have any, for fear of continually seeing them become the victims of a thousand accidents.

On the outside, and all round the dove-house, we fix one, or several, jutting cornices, from eight to ten inches, or, at least, from five to six, which will have the double advantage of serving as a walking-place for the pigeons, and of pre-

venting destructive animals, particularly the rats, from climbing the walls; which, moreover, ought to be entirely rough-cast with a mortar of lime and sand, very smooth and solid. During spring and autumn, pigeons are very fond of assembling together on these cornices to enjoy the rising sun. Besides which they serve them as resting-places, when, arriving in large flocks from the country, they cannot all at once enter the dovecote. It is, also, from these that the young ones first venture their flight, and gradually become accustomed to recognise their residence. The roof of the dovecote should be of slate or flat tiles, well joined, so as not to admit inclement weather, nor any animal, and especially the sparrow. These voracious and bold birds make great havoc in dove-houses where they can gain an entrance; they never fail to take advantage of the momentary absence of those pigeons which have young ones, to pierce and tear open with their beak the crops of the little animals to eat the grain they contain (?). The roof should be very sloping, and we must be very careful not to leave any moss or dirt upon it which would hold the damp. The door of the dovecote should be of solid oak; it must close perfectly everywhere, so as to intercept the entrance of the smallest animal.

This is what ought to be observed with regard to the exterior. We will now describe the interior. In some pigeon-houses we see the boxes for the nests erected against the walls from the ground. This appears to us a bad plan, because it gives the rats an opportunity of climbing easily, by this means, up to the highest stages, of entering all the nests and breaking the eggs, to eat the young ones, and lastly, of frightening the pigeons during the night, so as to induce them to desert the dove-house.

The nest-boxes should begin about four feet and a-half at least from the ground, for it has been proved by experience that a rat can jump at one leap from three feet and a-half to four feet, but never higher. The first row of boxes or nests will be placed on stones left by the masons jutting out from the wall for that purpose, and the rows above will be placed on the first. The last row ought to be from eighteen inches to two feet from the timber of the roof, to guard them when brooding from the cold and damp, which will penetrate between the tiles in spite of every precaution. The boxes should be constructed of bricks; about eight inches high, nine or ten inches wide, and from ten to twelve inches deep. In front of every row of nests there should be a small jutting cornice of five or six inches wide, or at least the width of a brick, to assist the young pigeons, whose flight is uncertain, in returning conveniently to their nest, and to give them all a walking place, where they can collect together under cover, and take their pleasure in bad weather. It is also there that the male will watch lest his female should be troubled while sitting. If we find much difficulty in fixing these kind of little footpaths in front of every row, we may content ourselves with constructing three or four cornices, placed at certain distances as on the outside; they will serve as resting places to those young pigeons which may have to regain a nest in the upper row. In some countries, instead of constructing the nest of brick as we have just described, they content themselves with placing on a slight framework of wood, some pots of baked earth or plaster; of a round form, very much like a deep plate or wicker basket; they place over every nest a kind of roost or stick, exceeding five or six inches, on which the pigeons rest when they are about to enter or leave their nest.

The first method, although better than the second, has, however, one very great inconvenience. When the young pigeons begin to get large, they are very fond of changing their places; but in doing so their movements are so heavy and awkward that they often fall from the nest. The result of this is that they are killed by the fall, or should they escape the first danger, they are sure to be destroyed by the others. They may also break the eggs, or knock down the little ones in the nests in which they fall. Besides, the female who does not like to be troubled during incubation, finds herself exposed to the attacks of other pigeons, who attempt to dislodge her.

The second method has the same inconvenience as the first. Further, the parasitical insects with which pigeons are infested, such as mites and bugs, find a better nest. The baskets, however, are not so solid, and more expensive, for they must be replaced every three or four years.

Some persons content themselves with making boxes on boards, of eight inches each way, with an edge jutting out in front, or simply with a roost, as we have just said. They make the opening a little narrower than the interior of the box, so that the sitting pigeon can better defend itself against those that would drive it from the nest. This would be a more advantageous manner, because it would be easy to clean the nests, and in cold seasons the young ones are warmer on wood than brick; but it has the serious inconvenience of retaining bugs and other insects in the dove-house, and of concentrating the heat too much in the nest during summer. The flooring must be perfectly square, to prevent rats and mice from opening a passage into it. We ought even to place vertically all round a row of square tiles, inserted in the wall, so that these animals cannot make trenches in the foundation of the brickwork.

The interior and exterior of the nest, the walls, as well inside as out, the timber, and, in short, every part of the habitation, should be painted white, with several good layers of whiting, which we should take care to renew every time they begin to get yellow. Pigeons are singularly fond of this colour; besides which, it enables them to discover their dwelling from a great distance, and to direct their flight accordingly. Besides the window we have mentioned, there are also one or two more shutting with a groove, and, above all, perfectly close, so as not to allow the cold to penetrate. Whenever the air is soft and mild we must open it to renew the air, and draw out the unhealthy smells. This precaution is extremely salutary.

DESCRIPTIONS OF PIGEONS.

TENTH RACE.

(Continued from page 248.)

PERSIAN OR TURKISH PIGEON (*Columba turcica*).—These superb birds form the natural link between the Warded and the Runt pigeons. They have, like the first, a very large mushroom on the nostrils, a great fleshy ribbon extending round the eyes from the beak, and a very large body; but they resemble the Runts in their thighs, legs, and neck which is much shorter, and in their long wings. Some modern authors have fallen into the same error as M. Buffon, in supposing that all the varieties of this valuable race ought to be tufted. This mistake has been occasioned by the rarity of these birds in all their purity.

THE CRESTED PERSIAN PIGEON (*Columba turcica*, of Brisson, Frisch, and others) is best known in England as the *Mauwet*, or pigeon of Mahomet. It has a large excrescence above the beak, and a red ribbon extending round the eyes; is very large; has stockings on the thighs; is large in the body and wings; colours varied, dun colour, brown, almost black, iron grey, cream colour, &c. These birds,



which are very heavy, and do not stray far from their dove-cote, are lost in France, and are seldom to be met with in all their purity, except in Germany.

THE COMMON MAWMET, OR PERSIAN (*Columba turcica vulgaris*).—This large variety is getting very rare, notwithstanding its beauty, and great prolificacy. It only differs from the preceding in not having any tuft. (See cut.)

(To be continued.)

TO CORRESPONDENTS.

HABROTHAMNUS FASCICULARIS (F. W. T.).—We are sorry that you failed; you must give it more light. Pinch out the points of the shoots now, but prune it not at all, or but little, in spring. In your severe pruning last year, you removed the flowering buds, and the strong subsequent growth was quite a matter of course.

STEPHANOTIS FLORIBUNDA (Ibid).—We are glad that the advice given, vol. v., p. 27, has answered so well in your experience. You cannot get the young plant upon the balloon trellis too soon. If you wish to cover it quickly, you must sacrifice bloom to growth for a year, by stopping, &c., unless your plant is large enough to cover it at once thinly. You will frequently have more flowers with the shoots eight inches apart than where they are three. A plant taken from a rafter, as you say, will not look well at first, but the leaves will soon accommodate themselves to the change, and turn up their upper sides to the light. A twelve inch pot, and a balloon trellis, 3½ ft. in height by 2 ft. in diameter, would be suitable for your plant. To bloom it quickly, if you wish it to grow freely, a 15-inch pot may be substituted, and a much larger trellis; these are all matters of taste and convenience. What you require in *Heaths* will be attended to ere long.

RIPENING WALL GRAPES (Pitti).—See what Mr. Errington says to-day.

MULBERRY AGAINST A S. WALL (P. B. C.).—A strong mulberry planted this autumn, in a sandy loam, about fifteen inches deep, might be made to produce fruit, we think, in the summer of 1854, but root-pruning would have to be resorted to in the year 1853. Let the standards you allude to be severely root-pruned in the middle of September, and we think they will be brought to bear. Peaches will be more certain. Our correspondent says, "I must tell you I have this year a convincing proof of the soundness of this theory, namely, a fine tree well laden with the Moor Park Apricot, which I may say is a very rare, if not a single, case in *West Norfolk*."

GERANIUM CUTTINGS (J. W.).—When the weather gets cold, towards the end of September, is the time to pot the geraniums struck in the open ground; these must be kept in pots, and watered all winter. The old geraniums are the sorts to keep dormant in cellars all winter; they are first pruned close, then dried slowly in a shed before they are put into the cellar, but unless the cellar is quite dry they will all mould and rot in six weeks. The top of the house is a far better place for them. Fancy geraniums will not at all keep that way.

YUCCA CULTURE (Rev. G. M.).—Your plant of this is quite wrong, and very likely half-starved for years. No plant flowers more freely in very good soil, but it must be good, and plenty of it, to get it to flower well. The Yuccas are shamefully used all over the country because they will live out a wretched life anywhere. Dig down outside the roots to the depth of 20 inches, and pick away as much of the poor soil from among the roots as you can, and fill in with two barrowfuls of very good soil from the kitchen-garden, but do only one half at a time for fear of letting it tumble down. Leave the suckers on till April.

CLIMBER FOR A BEE-HOUSE (Ibid).—The grape vine will do very well as you propose; it will cover your bee-house soon, and be less troublesome to keep than most climbers in so low a place. We will enquire about the *Botanic Garden*.

BEDDING PLANTS (J. Betsworth).—"A small pit with a flue in it" will keep bedding plants better than a greenhouse, unless you were to devote the house entirely to the bedders; and if you did, the only difference between a pit and the house would be the size and the convenience of the latter. This is the first question or letter we have had from you, and, as we want particularly to make a good gardener of you, let us hear from you again when you decide in your own mind which of the two you will try.

CINERARIAS (W. H.).—A spent hotbed is an excellent place for rearing your cinerarias during the next three or four months. Put a thin layer of screened ashes on the surface, to stand the pots on; they will help to keep down the damp when the nights get long.

WHITE AZALEA INDICA (Sarah).—Take your sickly plant out of the pot and adjust the drainage; clear off a little from the bottom of the ball and put it in the same pot; scrape the surface a little and put a layer of fresh sandy peat on the top; water sparingly, and keep it from the rain, but the middle of September will be time enough to put it in a pit or indoors. Your *Camellia* has "set its flower buds," and is going on well; keep it out till the end of September. Unless your *Brompton Stocks* stand too thick you might leave them as they are till next spring, but they may be planted in October. They flower next May and June, for six weeks. Plant out part of the *biennials* next month, and part in the spring, to give them two chances.

TRANSPLANTING ROSES (E. S. R.).—There is not the least danger in removing all your roses next Michaelmas. An article was published by us last September or October to meet your case; we also transplanted roses last Michaelmas with perfect success. Have them pruned a week or ten days before you take them up, and then the distance to carry them makes no difference, if you pack the roots in damp moss, or any other damp packing stuff. The only secret in removing roses any day from the middle of September to the end of October is, to keep the roots damp all the time they are out of the ground.

PLANTING EVERGREENS (Julius).—To make "a dense shrubbery" with evergreens, the weight of the purse is the rule, unless you happen to have the plants by you; in other words, plant thickly in the first instance, and thin out in time. If you buy the common *Laurels*, let

them be from three to four feet high, and put them in at from four to six feet apart. *Portugal Laurels* keep near the back, and from about eight to ten feet apart, and every other one of them may be removed some ten years hence. The common *Green Holly* plant in the centre between the Portugals, and ten feet further back; then all the open spaces may be filled in with the common laurels, as thickly as you can afford. *Laurestinus* is not suitable for this work; never plant these nearer than ten feet, unless you want them for a low hedge.

PELARGONIUMS AND OTHER THINGS (*A lover of flowers from childhood*).—There are only two kinds of *Diadematum* fit for beds; the deeper coloured of the two is *rubescens*, and sometimes it is called *superbum*. There are two more of them; *bicolor*, not fit for a bed, and *regium*, not in the trade. We can name them from a single leaf of each if you wish it. *Rouge et Noir* and *Lady Mary Fox* belong to two different sections; but not at all akin to the oak-leaf section. But why bother yourself about sections at all? We quite agree with you about the "candle plant;" the name of it is *Cacalia articulata*, and the flower is a little ugly yellow daisy-looking thing.

ERRORS.—Page 305, col. 1, line 7 from bottom, for "Drumlaurick," read "Drumlanrick," and line 26 from bottom, for "efforts," read "offsets."

SELECTIONS OF FLORISTS' FLOWERS (*A Correspondent*).—The following lists are made of what we consider the best in cultivation, having regard at the same time to variety and contrast of colour. **DAHLIAS**.—*King of Dahlias*, *Beeswing*, *Duke of Wellington* (orange), *Princess Radziville* (white and purple), *Marchioness Cornwallis* (bluish), *Admiral Stopford* (dark), *Richard Cobden* (shaded dark), *Nonpareil* (red), *Admiral* (lilac), *Fearless* (lilac), *Toisson d'Or* (buff), *Burmaid* (splendid rosy edge, and if covered, white), *Duke of Cambridge* (rosy lilac), *Yellow Standard* (yellow), *Scarlet Gem* (scarlet), *George Glenny* (yellow), *Essex Triumph* (black), *Antagonist* (white), *Dr. Frampton* (splendid edged flower), *Andromeda* (straw-colour tipped with pink), *Sir F. Bathurst* (rosy purple), *Mr. Seldon* (purple), *Snowflake* (white). **CARNATIONS**.—*May's Fulconbridge*, *Mansley's Beauty of Woodhouse*, *Martin's Splendid*, *Brookes's Flora's Garland*, *Barringer's Duke of Devonshire*, and *Hale's Prince Albert*. **PINKS**.—*Wilmer's Laura*, *Read's Jenny Lind*, *Turner's Masterpiece*, *Smith's Huntsman*, *Bragg's George Glenny*, and *Hale's Queen of England*. **PANSIES**.—*Duke of Cornwall* (yellow ground), *Zahdi* (yellow ground), *Duchess of Rutland* (white ground), *Ophir* (yellow self), *White Sergeant* (white self), and *Goliath* (dark self). **PETUNIAS**.—*Crimson King*, and *Attraction*. **CALCEOLARIAS**.—*Baron Eden*, *Ne Plus Ultra*, and *Miss Charleris*. **RANUNCULUSES**.—*Agamemnon*, *Admitus*, *Edgar*, *Electra*, *Prince of Wales*, and *Reliance*. **ANEMONES**.—Here we are at a loss. There is no dependance on a single name being correct, some are sent out under half-a-dozen names, and in other cases one name serves for a dozen flowers.

CROPS IN SUSSEX.—The Rev. R. Blackburn, of Selham, near Petworth, writes to us as follows:—"The country in this immediate neighbourhood is of an undulating character; the soil in most cases a light sandy loam, the climate dry and genial. *Peaches* and *Nectarines* almost a failure; *Apricots* entirely so. *Pears* have generally, also, failed, after showing a good bloom. My trees are mostly young. Out of twenty-four sorts, about twelve of which might have borne fruit; the only one which has a fair crop is a *Winter Nelis* against a south wall. This sort cannot be too highly recommended for a good aspect on a wall. The fruit is, I think, equal under these circumstances to the *Marie Louise*, and I have found it very rarely fail of a crop. *Plums*, also, an almost total failure; the only exception in my garden is *Chapman's Prince of Wales*. In other gardens there is, here and there, a tree which has escaped, but they are chiefly, I believe, those of the commoner and coarser character. *Apples*, an excellent yield; *Gooseberries*, *Currants*, *Raspberries*, a good crop; *Strawberries* most abundant and fine; *Figs* an average quantity; *Cherries* a tolerable muster."

EARWIGS IN BEE-HIVES (*Apiphilus*).—If your bees are placed upon separate pedestals, as figured in page 239, vol. i., of *THE COTTAGE GARDENER*, a piece of sheepskin, with the wool outwards, fastened lightly round the pedestal, will prevent the ascent both of ants and earwigs; but you have little to fear from either of them if your stocks are strong. Floor-boards will not require cleaning before October or November; the hive had then better be loosened from the board the day before it is cleaned; a hard brush cleans them quickly; do it in the middle of a clear day.

DIELYTRA SPECTABILIS (*A Mooredger*).—This plant, sent to England for the first time by Mr. Fortune in 1846, is the same species as that mentioned in *The Cottage Gardeners' Dictionary*, as first discovered in Siberia in 1810. It was then found in that part of Siberia which joins the frontier of China. It was originally called *Fumaria spectabilis*; it is the *Cupnorchis spectabilis* of Bockhausen, and the *Corydalis spectabilis* of Persoon.

CARNATION AND PICOTEE (*L. R. Lucas*).—The difference between them is that *Carnations* have their colours streaked upon the petals, whereas in *Picotees* the colour is confined exclusively to the edge, so as to form a border round the petals. We shall be glad to hear about the *Vines* in your orchard-house. Red currants covered with ivy, must be very acid from want of light and warmth.

HARTLEY'S ROUGH GLASS (*Rev. J. T. P.*).—We know this to be excellent, both for roofing greenhouses and pits. It intercepts the direct rays of the sun, by which it diminishes the risk of scorching, without perceptibly diminishing either the heat or light. Avoiding scorching depends, however, as much upon good ventilation getting the upper surfaces of the leaves, and the inner surface of the glass dry, very early in the morning.

ROSE AND DAHLIA (*A Subscriber*).—Buy *The Rose Tree*, a little volume published at the office of *The Gardeners' Chronicle*; and *The Dahlia*, by Johnson and Turner, published by Bohn. Turfy loam, which has remained unturned in a heap for five or six years, will not have lost its useful properties. If you require it for potting purposes, add a little leaf-mould to it.

HARDY FRUIT-TREES (*Latonensis*).—You cannot have a better selection than those at page 155 of our last volume. Trench your soil as you

propose, and put tiles beneath each tree to keep the roots from the gravel. Keep your manure for mulching over the roots, and by pointing a little into the surface yearly you will induce the roots to keep near it.

ECCREMOCARPUS SCABRA (*An Admirer of Flowers*).—This, in most places, requires winter protection. You will see in *The Cottage Gardeners' Dictionary* that it is half-hardy, but that in some sheltered places it remains safe in the ground through the winter. We are glad to hear that you "possess one which is now nearly five years old, and has stood the winter without any protection, having gathered flowers from it up to Christmas. When two years old, not liking its situation, you removed it in the spring, not a very clever trick, perhaps, as they make such long roots, and are rather shy of moving. The stem is three inches round, the aspect west, situation about 20 miles north of London, soil light, gravel beneath."

STIMULANT FOR FLOWERS (*L. M. N.*).—You ask, "what is the white-looking powder, an ounce to a gallon of water, used by gardeners to promote the growth of roses and flowers." We know of only two such powders—Sulphate of Ammonia and Nitrate of Soda. The latter is usually applied to Chrysanthemums for a day or two before exhibiting them. Two good climbing evergreen Roses for your elm will be *Felicite perpetuelle* and *Princess Louise*; but they will not do much if the shade is excessive, and they should be planted in rich soil in tubs, or the elm roots will starve them.

FIXING AMMONIA (*S. Anderson*).—Sulphuric Acid (Oil of Vitrol) will be best for mixing with the drainings of your cow-dung; but if you use the drainings fresh and dig them into the soil at once, you need no acid. One gallon of such drainings to four gallons of water will be quite strong enough for Dahlias, Roses, and Pansies.

SHANKING IN GRAPES.—*G. S. B.* writes thus to us: "In *THE COTTAGE GARDENER*, vol. iii. p. 82, you observe that you never knew a case of shanking, when the vine roots were all inside. Alas, I can now give you a case. The vine is a Grizzly Frontignac. Being a young plant I did not allow it to bear till this year, and only left two bunches, thinned out to about twenty-four berries each. The tree is very vigorous. House without fire-heat, but kept close and damp until the grapes changed colour. This they did about a week ago, when more air was given, and the air dried. Border only about eighteen inches, on a bed of chalk rubbish. Upon looking at your separate volumes on the vine, I observe that you distinguish between shrivelling and shanking. The case is that the footstalks of some of the berries on each branch, some before colouring and others after colouring, withered into a thin black thread. Purple Constantia, in the same house, has not shanked, nor did it last year."—We can only reply that from some cause the root action of the Frontignac is deficient. Have the roots been kept well watered?

FLOWER GARDEN (*S. G.*).—We should dig it up rough, if it requires such treatment, and reserve the manuring until the spring, when a less quantity will do than if put on in the autumn. But what is your object in breaking up your flower-garden? There is pleasure to be derived from it even in winter.

HARDY CREEPER FOR SEA-SIDE.—A correspondent asks, in reference to a query at page 296, "Has 'Osmond's Ash' ever tried training the Tamarisk against his sea-weathered house: it is a well-known fence plant in such localities. But I was much struck with a specimen more tenderly treated against a public-house near Broadstairs."

BALM OF GILEAD.—*J. Toms*, of Ely Davy's Road, Croydon, says that this is quite hardy, though usually a potted window plant,—that it may be grown in any quantity, and that he finds it excellent for scenting ointments, &c. We shall be glad of an accurate report of the produce of the *Wheat transplanting*.

PARALYSED DUCKS.—*Marian* writes to us as follows:—"I wonder if *F. B.* has found your remedy for his paralysed ducks efficacious. I am not very learned in poultry, so beg to apologise for offering an opinion; but we once had a brood of ducks hatched in such hot weather as this, which lost the use of their legs, and all, or nearly all, died. We were told that it was owing to the heat, and that if we had allowed them access to the pond from the first (contrary to our usual practice) they would have done well. Our soil here (near the Mendip Hills) is light good garden soil, yet we never can get good spinach; it is so strong and acrid as to be almost unpleasant. Can you tell us why, or how to improve it?" We never met with such a case, and shall be glad to hear from any correspondent who has, and who discovered a remedy. Surely a good dressing of manure would improve the quality of the spinach; a soil can scarcely be too rich for this vegetable.

NAMES OF PLANTS (*T. M. W.*).—1. *Anchusa italica*. 2. *Borago officinalis*. Both are Borageworts. (*A Constant Reader*).—Yours is certainly a *Silene*, and probably *S. pendula*, but your specimen was too small to admit of certainty. (*X. Y. Z.*).—1. *Asplenium adiantum-nigrum*. 2. *Asplenium trichomanes*. (*W. W.*—*Altrincham*).—1. *Oenothera acaulis*. 2. *A. Salvia*, species uncertain. 3. *Linaria purpurea*. (*M.*—*Fermanagh*).—Yours is *Phlox ne plus ultra*. We will endeavour to make out your *Geranium*. (*J. G.*).—*Rhus cotinus*, the Venetian Sumach. (*M. R.*).—1. *Melissa calamintha*. 2. We think *Polygonum hydropiper*, but specimen bad. 3. *Inula dysenterica*. 4. *Eupatorium cannabinum*. (*Harriet*).—The white flower is *Achillea ptarmica pleno*, and the blue, *Phacelia congesta*.

CYCLAMEN AND ARUM (*J. S. B.*).—We know of no separate treatises on these.

RANTING WIDOW.—*Fiat Justitia* points out that "Helena C. W.," at page 141 of our 5th volume, first pointed out that this popular name belongs to *Epilobium angustifolium*.

HIMALAYAH PUMPKIN (*B. S.*).—It is excellent boiled like the Vegetable Marrow, or mashed as turnips, or made into soup according to the recipe at page 43 of our first volume.

PIGS (*W. H. W.*).—All pigs, when five or six months old, apparently cease to grow quickly, but it would be found, that if thrifty, they continued to increase in weight, if put into the balance at monthly intervals.

CANDLE PLANT.—*N. S. H.* informs us that *Cacalia articulata* is frequently called the Candle plant, and by the uninitiated, the *Candle geranium*.

COCHIN-CHINA FOWLS.—If *An Amateur*, *Headcorn*, would forward his name and address to the Editor of *THE COTTAGE GARDENER*, *Anster Bonn* could offer him some assistance, and would do so with great pleasure.

GRUBS ON ROSES (Evesham).—The under-sides of the rose leaves sent are covered with a very minute red fungus, and on the upper side of some of them were a few very small larvæ of a little midge (*Cecidomyia* sp.?). It is not easy to say whether the latter have been attracted to deposit their eggs on the leaves by their diseased condition produced by the previous growth of the fungus, or whether the fungus has been propagated only upon leaves previously infected and injured by the larvæ; we should think the former most likely. At all events washing the trees well with lime-water, or infusion of quassia or tobacco, will probably destroy the larvæ and the fungi by the same application of sulphur as is adopted to destroy the growth of fungi on the Vine and Peach.

CALENDAR FOR SEPTEMBER.

ORCHID HOUSE.

AIR, give only on bright sunny days, from 10 o'clock till 3. **BLOCKS**, continue to syringe morning and evening, the first half of the month; the latter end in the mornings only. **BASKETS** may be kept rather drier, excepting such as Stanhopeas that are growing; let these be dipped in tepid water once a-week, at least, using discretion, according to the state they are in as to being wet or dry. **DENDROBIUMS**: many species will now have perfected their pseudo-bulbs for the season; let such be immediately removed into a cooler house, and have no water given them. Other kinds will require the same treatment as soon as the full growth is attained. **GROWING PLANTS** may still be retained in the warm, moist atmosphere of the orchid-house, and be kept moist at the roots. **HEAT** in this month may be reduced a few degrees. Sudden changes are always dangerous; by gradually reducing the heat the plants become inured to the change. **INSECTS**, search for diligently, and destroy; every one destroyed now, will prevent myriads from being bred next year. **LÆLIA AUTUMNALIS** will be growing rapidly; keep it well supplied with water, as, upon the strength it acquires during this month, will depend the number of flowers on the spike in October or November. **REST**, give to all plants that have made their annual growth; without this they would continue to grow and never flower. **SHADE** may be much reduced now, except on very bright days during the beginning of the month. **WATER**, continue to give to growing plants till the year's growth is completed, then withhold it, excepting to a few species without pseudo-bulbs, which, not having that storehouse of food laid up, must have occasional dampings and sprinklings.

T. APPELBY.

PLANT STOVE.

AIR, give abundantly on all favourable occasions. **ACHIMENES** going out of bloom, place in a cold pit, giving water to induce them to go early to rest. **ACHIMENES PICTA**, continue to grow on, to flower at Christmas. **CLIMBERS** on the rafters, commence to reduce greatly, by pruning off all superfluous shoots, tying the rest in neatly. In pots trained on trellises, these would be greatly benefited by being placed out of doors in some sheltered nook for a week or two at the commencement of this month; when set out, lay them on one side on a grass plot, and give the leaves on the under side a severe syringing. This would clear them of the red spider, at all events. **FRAMES** containing stove plants must now be covered up every night with double mats; uncover early, and lift up the light for a minute or two to let out foul air, and let in fresh and sweet; give these plants water only in the morning. **GESNERA ZEBRINA**: those started early will now be in flower; keep the rest growing by keeping up a heat of 72° or 75°, and supply water in a tepid state in due proportion. Other kinds of **GESNERAS** and **GLOXINIAS** gone out of bloom place in cool frames, and withhold water, to cause them to grow gradually to rest; plants of this kind struck in the spring will now be in flower; keep them in the stove, and give water. **PLANTS**, generally, that have bloomed, give less water and heat to. **WINTER-BLOOMING PLANTS**, give every encouragement to, to cause a fine bloom. **SOILS**, procure and prepare for use by frequently turning them over; keep them clear of weeds at all times.

T. APPELBY.

FLORISTS' FLOWERS.

ANEMONES, plant in rich light soil. **AURICULAS** and **POLYANTHUSES**, remove towards the end of the month into winter shelter; take the opportunity to cleanse and top-dress slightly. **CARNATIONS** and **PICOTÉES**, take off layers and pot them in pairs in four-and-a-half inch pots; such layers as have not rooted, pot, and place in a frame, kept close, till they root. **CHRYSANTHEMUMS**, give liquid manure to; place in the greenhouse a few that show bloom, to flower early; protect from early frosts, should any occur. **CINERARIAS**, pot, and advance a stage. **DAHLIAS**, continue to protect the blooms from sun, rain, and insects; keep them well tied in, to prevent the autumnal winds from breaking off the side shoots. **FUCHSIA**, in pots, gone out of bloom, remove out of the greenhouse, and place in a situation where severe frost will not reach them; under a stage in the greenhouse, or in a cold pit, will do. **IRIS** (bulbous), plant, latter end of the month, in rich borders or beds. **LAYERS**, of **CARNATIONS**, **PANSIES**, and **PINKS**, take off as soon as rooted and pot. **PINKS**, prepare the bed or beds to plant out layers in; mix freely the soil with well decomposed littery dung and leaf-mould; plant the pipings or young plants out towards the end of the month. **RANUNCULUS**, if not all taken up must be done instantly, or the autumn rains will start them into growth prematurely; examine roots of, taken up previously, and if mouldy lay them in the sun to dry more effectually. **ROSES**, cut off all decayed blooms as they occur. **TULIP-BED**, prepare, by adding dung to the soil, if not exhausted, or by making an entire new bed; see that it is well drained, and place two inches of cow-dung over the drainage.

T. APPELBY.

FLOWER GARDEN.

ACONITE (Winter), plant, e. **ANEMONES**, plant best, e.; sow, b. **ANNUALS** (Hardy), sow, b. **AURICULAS** not shifted in August now remove; water and shade; prepare awning to protect in autumn and winter; sow, b. **BUD** perpetual roses to the end of the month. **BULBOUS-ROOTS**, plant for early blooming, e.; sow, b. **CARNATION** layers remove, b. **CHRYSANTHEMUMS**, plant cuttings, &c., b. **CUT ROUND THE ROOTS** of large specimens intended to be taken up next month, b. **CUT** in large specimens of geraniums, &c., in the beds to be potted, as soon as they break, to make specimens of, b. **CUTTINGS** of evergreens, put in, b. **DAHLIAS**, number and make list of, while in perfection, describing their colour, height, &c. **DRESS** borders assiduously. **EDGINGS**, trim, plant. **EVERGREENS**, plant, b.; make layers. **FIBROUS-ROOTED** perennials, propagate by slips, parting roots, &c. **FORK** over vacant compartments. **GRASS**, mow and roll; sow, b. **GRAVEL**, weed and roll. **GUERNSEY LILIES**, pot. **HEARTSEASE**, plant cuttings; trim old. **HEDGES**, clip, e.; it is the best time. **MIGNONETTE**, sow in pots, to shelter in frames. **ROOTED PIPINGS**, of pinks, &c., plant out for blooming. **PLANTING**, generally, commence, e. **POLYANTHUSES**, plant. **RANUNCULUSES**, plant best, e.; sow, b. **DOUBLE ROCKETS**, divide and transplant. **ROSES**, cut down, which must be removed at Michaelmas ten days before taking up. **SEEDLINGS**, plant out. **SEEDS**, gather as ripe, and keep down seed-pods in flower-beds. **TRANSPLANT** perennials, e. **TUBEROUS-ROOTED** plants, transplant. **TURF**, lay. **VERBENAS**, cut the roots of favourite sorts six inches from the stem; water them, and in three weeks they may be removed safely to be kept in pots; a few plants thus treated are better than many cuttings. **WATER** Annuals and other plants in dry weather. **YUCCAS** in, or showing for, bloom, give abundance of water to.

D. BEATON.

ORCHARD.

LOAMY COMPOSTS prepare for planting fruit-trees. Commence and continue **GATHERING** fruits as they ripen. **FIGS** stop. **GRAPES**, bag or cover from wasps, whether on walls or in houses. Of **SUPERFLUOUS** shoots on trained trees make a general removal, or shorten them where gross. **NETS**, apply to fruit-trees, to secure from birds. **NEW FRUIT PLANTATIONS**, make preparations for as soon as leisure occurs; planting may commence, e., with some fruits, provided the wood is ripened. **PEACHES** and **NECTARINES**, pluck off leaves to colour fruit, b. **RASPBERRIES**, the double-bearing, train and destroy suckers, b. **SPRAY**, remove from all fruit-trees to ripen the wood, b. **STORING** of fruit attend to regularly. **STRAWBERRIES**, remove in moist weather; strawberry-beds, dress from waste-runners, b. **STONES** of fruit for stock, save. **SULPHUR** still, for red spider and fruits. **VINES**, remove or stop all useless spray. **WALL-TREES** in general, look over once more. **ALPINE STRAWBERRIES**, still remove weak runners from. **BUSH-FRUIT**, retard with coverings, and examine occasionally. **FRUIT-ROOM**, prepare and cleanse. **TRAINING**, let all shoots be nailed close. **WASPS**, destroy nests.

R. ERRINGTON.

FRUIT-FORCING DEPARTMENT.

AIR, admit freely during the day, but more sparingly at night; day temperature, with sun, from 65° to 80°; night ditto, 55° to 60°. **BARK-BEDS**, turn and renew, if chilled; but beware of too much heat, as, instead of excitement, plants should be gradually hardened and ripened; an exception may be made in those plants fresh potted, as they should be encouraged to fill their pots with roots. **CLEAN** from all decaying leaves, insects, and mossy surfaces; and dress with fresh suitable compost. **WATER**: proportion it to the weather and the demands of your plants; shun at all times the dibbling system. **PINES**, finish shifting; shut up early in an afternoon, but give a little air in the night. **PEACH-HOUSE**: spare no attention to keep the wood healthy and well ripened. **VINE-RIES**: look after the grapes in early houses; ripen the wood; and in late houses, forward the colouring process, by closing much solar heat. **FIGS**, **PEACHES**, and all trees or shrubs in pots for early forcing, should have their wood well ripened, and then removed to the coldest, shadiest place you can command, protecting or plunging the pots. **MELONS** and **CUCUMBERS** in frames must be banked up with fermenting materials; stir the surface of the soil, but give scarcely any water after this period; a slight syringe early in the afternoon after a hot day will be useful. **Pot** off seedlings and cuttings of **CUCUMBERS** for winter: for this purpose none excels the *Sion House* or *Kenyon*. Finish potting **STRAWBERRIES** for forcing. **WATERING**, in general, must be more sparingly applied, e.

R. ERRINGTON.

GREENHOUSE.

AIR, give freely night and day, unless when very stormy. **ANNUALS**, such as *Collinsia*, *Nemophila*, *Schizanthus*, of sorts, sow towards the end of the month, for blooming in spring and early summer. **BULBS**, pot for early blooming, such as *Hyacinths*, *Narcissus*, *Tulips*, &c., also *Lachenalias*, *Erodiums*, &c. **CAMELLIAS**, still expose, but defend from heavy rains. **CUTTINGS** may still be made, and buddings proceeded with. **CINERARIAS**, sow for late blooming; prick off seedlings for spring flowering; shift into flower-pots for winter flowering. **CALCEOLARIAS**, sow seed; propagate by cuttings under hand-lights, and shift small plants already struck; shrubby kinds for the flower-garden will be time enough after the middle of the month. **ERICAS** and **AZALEAS**, get under shelter, ready to be housed by the end of the month. **GERANIUMS**, **MYRTLES**, **SALVIAS**, &c., propagate by cuttings, shift into larger pots, to be established before winter, and prepare for taking up out of the open border by cutting round the roots, doing only one half at a time. Where there is not plenty of room cuttings struck early will answer better than old plants taken up, and will also save much labour. **GLASS**, **FLUES**, &c., clean and repair. **PLANTS**, clean, tie, arrange. **POTS**, free from moss and filth, and fresh surface with suitable compost. In using new pots for hard-wooded plants, let them all be soaked, and then dried, before using. **SEEDLINGS** of all kinds, prick out as soon as they can be handled. **PROPAGATE** all half-hardy things, such as *Geraniums*, *Fuchsias*, *Salvias*, and especially *Calceolarias*, *Petunias*, *Verbenas*, &c.; the last three-named will do better than if struck earlier, the smallest pieces will do

best. They may either be planted in light sandy compost, in pots, or in a bed on a shady border, if on a north aspect, no shading will be required. WATER will still be abundantly required for plants growing freely, and those intended to bloom in winter, such as *Primroses*, *Cinerarias*, and *Chrysanthemums*, should have manure-water given freely. Whenever you observe the first flower-bud of a *Chrysanthemum*, though no larger than a pin's head, you may give the clear manure-water freely. Water should be given sparingly to plants that are to be put into a state of rest, just keeping them from flagging. All SUCCULENTS will now do better next season, the less they receive, provided their stems are not rendered very limp and soft. TROPEOLUMS with tuberous roots, pot whenever they begin to vegetate; they do not like shifting, therefore give a good-sized pot at once; give very little water until the pot is getting filled with roots, as they cannot bear sour sodden soil; let the pots be well drained. CLIMBERS will soon require cutting that have been growing rather naturally, in order that more light may be given to the plants below. If the house plants can be kept out of the house for a month longer, the creepers, to be beautiful, will require ample waterings. R. FISH.

KITCHEN-GARDEN.

ANGELICA, thin out, and earth-stir in the seed-bed where the plants may remain until the spring. AROMATIC POT HERBS, finish gathering. ARTICHOKEs, break down stems, and keep clear of weeds. ASPARAGUS-BEDS, weed. BALM, cut, and dry. BEANS, keep clear of weeds, and seed collect, and dry off well; store them away in the pods. BEET, take up as wanted. BORAGE, earth-stir amongst, and seed collect. BORE-COLE, plant out, and use the hoe freely amongst. BROCOLI, plant. BURNET, plant. CABBAGES, plant out; keep the seed-beds free from weeds, and earth-stir. *Red Dutch Cabbages* are ready for pickling. CARDOONS, earth up well in dry weather. CARROTS, attend to thinning and earth-stirring the August sown crops. CAULIFLOWER PLANTS, prick out in rich, open, warm borders, so as to have a good choice of plants to stand the winter. CELERY, earth up freely in dry weather, and plant out successional crops, which will be found very useful to the cook during the winter and spring months. CHERVIL, sow. COLEWORTS, plant out. CORIANDER, sow. CORN SALAD, sow. CRESS (American), sow and plant. WATERCRESS, plant. CUCUMBERS, attend to in pits and frames, top and clear away all decayed leaves, &c.; strike cuttings of favourite kinds, or sow seeds, for winter and spring growth. ENDIVE, plant out; tie up or otherwise cover up to blanch. FENNEL, plant and cut down. HOEING, attend to in all cases in dry weather. HYSSOP, plant. JERUSALEM ARTICHOKEs, keep clear of weeds; do not injure the

stems; take up roots if required for use. KIDNEY-BEANS, earth-stir among, and collect seeds; put away dry in pods. LEEKS, plant and earth-stir. LETTUCES may still be sown in warm borders, but attend to those which were sown at proper time; prick out from the seed-beds; keep them clear from weeds, so as to have a good winter supply of sturdy plants; tie up full grown. MELONS, be sparing with water at this season; give plenty of air to ripening fruit; keep up warmth by backing up with linings, &c.; shut up early. MINT, still cut and dry. MUSHROOM SPAWN, collect; this is often found when breaking up old hot-beds; put it away in close dry sheds until wanted. MUSHROOM-BEDS, make; this is the best season in the whole year for making mushroom-beds in any way, from the proper mushroom-house to the common span-roof bed in the open air to be covered with straw. NASTURTIUMS, gather as they become fit for use. ONIONS, press down to promote their bulbing, and take up those that are ripe; dry well before storing away for winter; attend to the August-sown; weed and earth-stir. POTATOES, take up and store away. PARSLEY, cut down and transplant in some warm corner for winter supply. PEAS, look after birds and collect seed of, dry them well, and store them away in their pods. PENNYROYAL, cut and dry. MARJORUM, the same. RADISHES, sow in warm borders. RHUBARB, clear from weeds. SAGE AND SAVORY may be planted. SAVOYS, plant and earth-stir. SEA-KALE-BEDS, keep clear from weeds. SEEDS, gather of all kinds as they ripen. SMALL SALADING, sow. SORREL, plant. SPINACH, sow in warm border; attend to thinning out the August-sown crops from eight to ten inches apart. TANSY AND TARAGON, attend to if required. THYME, plant. TURNIPS, sow of the best little early kinds; thin and hoe advancing crops. WATERING, in dry weather, must be particularly attended to previous to planting, or pricking out, any kind of young plants, or sowing the same. Water well both before and after. ATTEND to earthing up, earth-stirring, and hoeing in general, in dry weather; the rake may be advantageously used in many cases after the hoe at this catching season of the year. Many good managers only plant CABBAGES in one week of the whole year, and that in the first week in September, and from plants sown about the 21st of July; the soil to receive them should be made thoroughly rich. Others make a good planting at this time, and another in March, which will give an excellent supply for the whole year. T. WEAVER.

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WEEKLY CALENDAR.

M D	W D	SEPTEMBER 4—10, 1851.	WEATHER NEAR LONDON IN 1850.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bef. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in In.						
4	Th	Horticultural Society.	30.322—30.274	66—30	N.E.	—	18 a. 5	40 a. 6	11 47	9	0 57	247
5	F	Old Bartholomew.	30.377—30.277	66—37	N.E.	—	20	38	morn.	10	1 17	248
6	S	Flycatcher last seen.	30.343—30.285	64—30	N.E.	—	21	36	0 40	11	1 37	249
7	SUN	12 SUNDAY AFTER TRINITY.	30.401—30.357	67—33	E.	—	23	33	1 40	12	1 57	250
8	M	Nativity Blessed Virgin Mary.	30.446—30.388	60—36	N.	—	24	31	2 43	13	2 17	251
9	Tu	Dog-Rose casts its leaves.	30.367—30.297	61—47	N.E.	—	26	29	3 48	14	2 38	252
10	W	Yew berries ripe.	30.318—30.288	65—35	E.	—	28	26	rises	☺	2 58	253

IN our days of improved transport by sea, canal, and railway, and when more than two hundred coal-pits are in operation on the Tyne, Wear, and Tees alone, we have no vivid conception of the inconveniences and sufferings attendant upon a deficiency of fuel. Those coal mines, employing underground, in the county of Durham, more labourers than are engaged in cultivating its surface, produced, in the year 1843, the enormous quantity of 4,823,967 tons of coals, of which 2,754,719 tons were consumed in London; and the entire quantity of coal conveyed by ships only in that year, from one port of the United Kingdom to another, amounted to 7,649,469 tons! It is needless to dwell upon the importance of this enormous supply of fuel, for every reader who will dwell for an instant on the fire-sides, and factory furnaces, of the British Isles, will appreciate how much of their home comforts, and commercial greatness, depends upon that supply; and will feel that there is no exaggeration in this portion of the supposed address of the huge specimen of coal to the Crystal Palace, enshrining it—

’Twas mine these walls, with their silvery sheen,
To prepare in their crystal sea;
And the forest of pillars that tower within
Were molten and shaped by me.
Yon engine that proudly lifts his beam,
The spindles that merrily roll,
The circling wheel, and the moving steam,
Are worked by me—King Coal.

Yet it was not always so—or, rather, it was only of comparatively recent date that coal was raised to rule over the hearths and furnaces of the empire; for even as late as the time of James the First, wood usurped the throne of all the fuels, and was until then almost sole “ruler of the roast.” Even when coal began to be introduced into use, so loud against it was the clamour, denouncing its smoke as the cause of disease and death to man and beast, as well as to plants, that Edward the First forbade, by proclamation, its use. Before the more general employment of coal as a fuel, wood was the customary source of heat; and from a very early period of our history, our Statute Book records many acts of the legislature for the promotion of the growth of wood for such purposes, for its protection whilst growing, and to secure to the purchaser a due amount of this fuel in exchange for his money. We opine that our woodsmen would now rebel against having to mark every “billet,” or obeying the 43 Eliz., cap. 13, which commands that every “Taleshide, marked one, shall contain sixteen inches of assize in compass,” and “every faggot-stick to contain in length full three feet of assize or more, excepting only one stick or bend to be one foot long, to stop or harden the binding thereof!” We may smile now at grave legislators debating and determining the desirable length of a faggot-stick, but in those days “wood was scant and shillings few;” and it was no more derogatory for senators, such as Coke and Bacon, to insist upon a faggot-stick being thirty-six inches long, than it was for such of their successors, as Sir

Robert Peel and Lord John Russell, to preside over the parliament which provided that coals shall be sold by the pound.

So decreasing and so scarce was wood in the early part of the reign of James the First, that it was becoming a national grievance; and one evidence of this is before us in the form of a pamphlet, entitled, *The Commons’ Complaint, wherein is contained two Speciall Grievances, the generall destruction and waste of Woods in this Kingdome, with remedy for the same; also how to plant Wood according to the nature of every soil, without loss of ground, and how thereby many more and better Cattell may be yeerely bred; also the extreame dearth of Victuals, with four remedies for the same—the planting of Fruit-trees, breeding Fowle, destroying Vermine, &c.*, with folding plate and proclamation for the encouragement of the work. This was published in 1611, and its author was ARTHUR STANDISH. These grievances—the destruction and waste of wood in the kingdom, and the extreme dearth of victuals—he proposed to remedy by a general planting of fruit-trees, “an extraordinary breeding of fowl and pullen,” and by the destruction of vermin and pigeons, because of “the abundance of corn that these birds yearly devoured and destroyed.”

The author’s friend, Henry Peachem, in verses prefixed to the book, assures us that “the Genius of Britain” so highly admired the production, and the proposed remedies, that—

She swore by Thames, her hopes are more by Standish,
Than all the gold she got by Drake or Candish.

Yet “the Genius of Britain” has not preserved to us a fragment of her hopeful’s history. His work contains much curious information, and evinces an intimate acquaintance with the fen districts; but we glean from it no other biographical light than that he speaks of “Standish Hall, the house from whence I descended.” Now whether this Hall be in Gloucestershire, or Lancashire, where there are villages of the name, we cannot say. In 1613, appeared *New Directions of Experience to the Commons Complaint, by the encouragement of the Kings most excellent Majesty, as may appear, for the planting of Timber and Fire-wood; and how wood may be raised from hedges as may plentifully maintain the kingdom for all purposes without loss of ground, so as within thirty years all spring woods may be converted to tillage and pasture.* “Invented by Arthur Standish.”

The Royal Patents, directing attention to these books, are each dated at “Andever,” and acknowledge that “the decay of woods in this realm is universally complained of.” Mr. Standish states, “The whole kingdom containeth 29,568,000 acres, or near thereabouts, of which 4,000,000 are waste,” and it was these waste lands he proposed to plant.

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-four years, the average highest and lowest temperatures of these days are 69.5° and 48.8° respectively. The greatest heat, 84°, occurred on the 3rd in 1843, and the lowest cold, 31°, on the 6th in 1847. During the period 85 days were fine, and on 83 rain fell.

WE have “catalogues” of the Great Exhibition, and we have that clever little guide by the son of Mr. Douglas Jerrold, “How to see the Exhibition in four visits,” but these are intended for the mere sight-seers, those who go either to be amused, or to be able to talk about it. There is, however, another class of visitors, those who go thither to extract information, and subjects for reflection, and these require some more suggestive work upon this gathering together of the world’s products, and of the world’s ingenuity. It is curious to mingle with this class of visitors, and to listen to the lessons which acute minds, differing in their bias, extract from this peaceful contest for excellence. A clergyman told us he saw in it an assurance of the approaching re-gathering of the Jews in their own country; another, that it was a realisation of the prophetic period when the lion should lie down with the lamb; a third party we found tracing the progress of silk, from the cocoons of the worm through all the processes of dying and spinning until perfected in the silk fabrics of the East, and the velvets of Genoa; a fourth tells us he has derived in-

formation from specimens within the Crystal Pavilion, which will lead to vast changes in our dependence upon other countries for the supply of raw materials; and so might we go on citing instances, until we had far exceeded our allotted space, but we will quote no more; and only quoted the few we have, to recommend to such persons, and to all who wish to extract thoughtful and beneficial suggestions from the exhibition, a shilling volume now before us, bearing the following title:—

The World in its Workshops: a Critical Examination of the Fabrics, Machinery, and Works of Art, contained in the Great Exhibition. By JAMES WARD. One sentence of the introduction tells the intention of this work, namely, to point out that “In that wondrous structure there is study for a month, reflection for a year, and instruction for ever;” and we can assure our readers that it well carries out its purpose. In addition, it is full of amusement, and does not always “talk philosophy,” as the following quotation will shew:—

“We must pass over a multitude of queer-looking machines, with just as queer names, and can only wonder how

many of our honest, yet slow-moving, agricultural friends are enabled to appreciate them. But they must be appreciated, or there, it is fair to assume, they would not be; nevertheless, we shall studiously eschew them, as they are beyond the range of our comprehension. And we shall serve the multitude of churns, racks, mangers, spades, forks, &c., &c., in the same way: go ye that want them, say we, and pick and choose, for there is choice in abundance, and fastidious, indeed, must they be who cannot please themselves. Machines are now getting so perfect in almost every direction of human labour, that but a small amount of bodily exertion seems necessary to satisfy our wants, as compared to the preceding condition of things; the only wonder is how we managed to get on so decently as we have done without them, so essential, so indispensable, do most of them appear to a comfortable existence. We feed our horses and fatten our cattle with the aid of improved machinery, to the greater comfort, no doubt, of the poor beasts, and with greater economy to ourselves; for we are now-a-days literally killing them with kindness, which is true in more senses than one. Look at that iron crib for an ox to feed out of, and that "Archimedean Root-crusher," which prepares the food for the delicate creature; how comfortably he must spend his days, although they may be numbered a little more exactly than those of his lordly master. The god of the Egyptians never thrust his nose into so well-shapen an eating-vessel as that, highly prized and dearly-cherished as he must have been; and as to saying that "the ox knoweth his master's crib," according to the old proverb, or something like it, we defy a country quadruped, fresh from the strawyard or his native fields, to "smell out" the meaning of one of the newly-invented cribs, in the event of his master placing his food therein. Again, there is the "Patent Improved Pig Trough," and the "Circular Iron Pig Trough," both of which are ingeniously devised to teach the well-bred grunter to eat his food in a decent manner, and at the same time to economize the cost of his hide. Everything, in fine, is intended to improve everything that comes within the sphere of its operations.

We may now pass on to a continuation of our reporter's remarks on what is intended "to improve everything" in gardening.

158.—HALL'S GARDEN NET.

This net is made of cotton thread; the meshes are of different sizes. The usefulness of nets are unquestionable for gardening purposes; and the value of this, or the extent to which it will be used, depends very much on the price at which it is sold, as it will not be so durable as twine netting, and we do not consider it nearly so good for protecting wall-fruit from the ravages of insects as the well-known Nottingham net made by Haythorn.

186.—BATES'S INSTRUMENT TO FACILITATE THE REMOVAL OF PLANTS IN POTS.

This instrument consists of a long pole, six feet in length, with a pair of forceps with long circular blades, at the end, one of these blades being fixed to the pole, the other is made to open and close by means of two lines, placed on each side of the pole, worked by a small handle fixed to the pole about four feet from the forceps, and where the operator stands. The forceps are placed at an angle from the pole. In using the instrument, the blades of the forceps must be introduced round, or into the ball of the plant, and held tight by the string; the pole is used for a lever, with the edge of the pot for the fulcrum.

This is, at best, a very useless instrument; for, in the first place, great injury may be done to the roots of a plant by inserting the blades into the ball; and it

would require a much stronger instrument than the one exhibited to be of any use in shifting a large plant. The old-fashioned method of turning up a plant, and knocking it out by a tap on the edge of the pot on the potting-table, is much preferable.

192.—SMITH'S HORTICULTURAL HOT-WATER GAS STOVE.

This is a hot-water apparatus heated by gas-burners. The burners are simply holes pierced in a coil of pipe below the boiler; the heated air and gases from the burners pass up a tube through the boiler, which is made with pipes crossing the tube or chimney; so that the arrangement of the heating power appears to be very good, and no doubt may answer very well where gas is applicable.

208.—RESTELL'S GARDEN AND CONSERVATORY METALLIC LABELS, FLEXIBLE AND ADJUSTING WALL-TREE HOLDERS, ROSE-TREE GIRTHS, AND LOOP-LABELS. WARRANTED NOT TO CORRODE.

These things will be found very useful for the purposes for which they are designed, and they have a neat appearance, especially the holders. These are a loop, one end of which passes round the branch and through the other, where it is held in its place by a nail driven into the wall, and being flexible and adjusting, it allows the branch to grow; another advantage is that they will not harbour insects.

210.—TOBY AND SON: MODEL OF A GREENHOUSE.

This is a lean-to house, with potting-shed, fruit-room, and boiler-house behind, ventilated by the top lights sliding down, and the front lights opening; it has also shutters at both back and front, the aperture being covered with perforated zinc; the house is heated by hot water.

The house is well enough for places where there is only one house; but for the purpose of high cultivation span-roofed houses are much better, though they cost more to erect them than a lean-to house after the plan of the model.

215.—PADWICK'S HAND-DRILL FOR DEPOSITING GARDEN AND OTHER SEEDS, ADOPTED FOR PATCHING WHERE SEED HAS FAILED, FOR ALLOTMENTS OR ROUGH UNEVEN GROUND.

The drill consists of a box made of wood, with a handle and coulter fixed to one side of it, set at proper angles, for the man to walk who guides it. At the other side is the wheel, which works a wheel or plate, on its axle within the box set with small cups which take up the seed from the bottom of the box, and as the cups go round, discharge the seeds into a hopper, where they pass down the hollow coulter.

This is a simple and useful little drill for the purposes mentioned above.

PADWICK'S PLANTING LINE.—This has a bar of wood, pins at each end to fix it in the ground; on the top of this is another bar of wood, hinged to the middle of the other, working either way. This has pegs set at a distance of six inches from the centre, and three inches

apart, and it is also furnished with a spring at one side of the centre, under the upper bar, which is held down by an eye and pin, when the instrument is placed and the line used for planting. When one row is finished, the pin which holds the upper bar is drawn out, and the spring instantly throws over the line to the same distance from the centre, as before. The instrument requires shifting every other line, two lines being done at once.

This instrument will not be of much use as, in planting, a man usually plants on the right hand-side of the line, and, consequently, has to pass along after planting, and can shift his line each time. In this he would also have to pass along his line each time he finished planting.

GARDENING GOSSIP.

NUMEROUS certificates of merit were given at the *National Floricultural Society* at their last meeting, and we saw one of their leading members in a great pet with a lot of things not noticed. There were, of *Dahlias*, *Nancy*, a red and white, and *Douglas Jerrold*, a yellow and red, belonging to Mr. Keynes; the latter with good long petals, but the former dull in colour. These had certificates. *Erica Marnockiana*, like *Retorta*, was equally fortunate. *Delphinium Hendersonii* the same. A *Hollyhock* from Mr. Chater, rosy and a tolerable spike; a similar form. And a *Fuchsia*, *Nil desperandum*, brought up the rear; a red-and-purple variety, reflexing prettily, and of pleasing habit. Then came certificates of commendation: *Hollyhocks*, *Magnet* and *Meteor*; three *Gladioluses* from Mr. Wilmore; and a *Dahlia*, *Dr. Frampton*. If there be any difference between a certificate and a certificate of commendation, some of these things ought to have changed places. The *Duke of Wellington*, hollyhock was, as an advance in real quality, the best in the room; but there was no notice for that.

The Society is giving umbrage to many of its supporters. It has the best room in London for showing, but it would appear that the society show only for themselves. Looking at the flowers while the society's report is being read is out of the question; and the report once done with, people feel no little annoyance at the instant preparations for taking away. Nobody who goes to see novelties wants to hear read a long list of the things exhibited, old and new, and unless they are present by the time this is read, there is no chance of a good look at the novelties.

Everything ought to be on view a good hour, or hour-and-a-half; many go now after the things are half-packed up, or gone altogether. The meeting is called at three o'clock; the report and the confirmation of the minutes take half-an-hour; and people who send their things two or three hundred miles have no right to be satisfied with this very brief display. But the rapidity with which things are removed after the award is made, gives every appearance of a disposition to avoid publicity instead of courting it. These meetings ought to give all amateurs an opportunity of inspecting novelties for themselves, and there is no such opportunity offered now. This must be altered, or the country members will drop off as fast as they came on.

The *Vauxhall Gardens* third and last show came off

on the 20th August, and proved a complete realisation of all we had said of it. Flowers are not attractive at Vauxhall. For the greater part of the evening very few persons stopped to look at the very fine plants that were exhibited; whatever little amusement happened to be going on took all the attention, and the tables were as clear of people the whole evening as could be desired. The plants were badly arranged for effect, as if nobody of the least experience had been near the place.

Fuchsias were badly shown. The very worst varieties badly grown. "*One in the Ring*" and "*Elizabeth*" were the only effective ones among all the groups. Many red selfs, or varieties showing no contrast between the sepals and corolla, spoiled almost every collection. The *Dahlias* were good for the hot season. Plants excellent; but it is a sad prostitution of floriculture to see noble specimens not even for a moment arresting the progress of people, who scramble with the greatest anxiety by them to run after a fool in the circle, or see a fountain on the garden stage. We examined the plants almost alone, from the time the concert began until the fire works had gone off; and then, when there was nothing but the flowers and plants to take the attention, the admirers were confined chiefly to the exhibitors themselves. In fact, the whole three shows proved a total failure to all but the prize-hunters who promoted them. E. Y.

NEW PLANTS.

THEIR PORTRAITS AND BIOGRAPHIES.



GREENEST-LEAVED FORSYTHE (*Forsythia viridissima*).—*Botanical Magazine*, t. 4587.—Although little or nothing had been heard of this genus until lately, when Mr. Fortune discovered this species of it in China, it had been founded, many years ago, by Vahl, a Danish botanist and voluminous author, in commemoration of

Mr. Forsyth, Royal Gardens at Kensington, the author of a work on fruit-trees, and of a celebrated composition to cure the wounds of, and renovate, old trees, for which a large sum of money was voted to him by Parliament, part of which, however, he only received, but still enough to stamp the low ebb at which vegetable physiology stood in this country even so late as the middle of the reign of George III. The plant on which the genus was founded by Vahl is *F. suspensa*, a native of Japan. Thunberg called this plant a Lilac, showing that he was on the right scent about its natural affinity; but there are sufficient points about it to separate it from the Lilac in the eyes both of botanists and gardeners.

Forsythia viridissima appears to be one of those plants which the Chinese Mandarins cultivate with great care in their gardens for their ornament or perfumes, according to Mr. Fortune, who sent it over to the Horticultural Society. "I first discovered it," says Mr. Fortune, "growing in the same garden with *Weigela rosea*, which belonged to a Chinese Mandarin, on the island of Chusan, and was generally called the 'Grotto Garden' by the English. I afterwards found it wild amongst the mountains of the interior in the province of Chekiang, where I thought it even more ornamental in its natural state amongst the hedges than when cultivated in the fairy gardens of the Mandarins." Mr. Fortune entertained some doubts about its being quite hardy for the climate of England; but it has proved to be quite so; and although THE COTTAGE GARDENER has recommended it ere now, we would still remind amateurs, who may not yet possess it, to add it to their shrubby plants. Give it good rich soil, and let it not be too much crowded with other plants; if possible, too, let it be planted where its beautiful yellow flowers may be seen from the parlour-windows in early spring. Like the Almond and the Lilac it will open its flowers before the leaves in January or February, if slightly forced. Like the Lilac, it belongs to the Natural Order *Oliveworts* (*Oleaceæ*), and most probably it could be grafted either as a bush or standard high on the common Lilac, or intermixed with the Lilac branches in alternate shoots, from buds or grafts. Like the Olive, Privet, and Jasmine, the Forsythias belong to the first order of the second class in the Linnean system, *Diandria Monogynia*.

F. viridissima reaches the height of six feet; branches, dark-brown and angled; leaves, sharp-pointed, spear-headed, upper part saw-edged, appearing after the flowers; flowers, solitary, or in pairs, on short stalks from sides of branches; calyx, four-lobed; corolla, yellow, wheel-shaped, tube short, but limb in four long segments.

PRICKLY HEMIANDRA (*Hemiandra pungens*).—*Gardener's Magazine of Botany*, iii. 81.—This is a genus of *Lipworts*, or *Labiates*, (*Lamiaceæ*), named by Dr. Brown from a peculiarity in the anthers. *Hemiandra* is a compound from *hemi*, half, and *aner*, the anther, or male organ; that is, half-anthered, and may thus be explained: The anthers in this order are, generally, two-celled—rarely one-celled—but sometimes they look as if composed of one cell only; whilst in *Hemiandra* there are two cells in the anther, but one of them is barren, and hangs down, so that *half-anthered*, or *Hemiandra*, is a descriptive name well suited for the occasion. *Hemiandra* belongs to a section of the *Lipworts*, which is named after an old, but gay, greenhouse plant called *Prostranthera*; and those of our readers who know *Prostranthera violacea* will have no difficulty in making out the colour of this *Hemiandra*, which is a pinkish-lilac, with crimson spots in the throat or upper part of the tube of the flower. The plant, if well grown and kept low and

bushy, would make a pretty specimen for the greenhouse stage. It is of an upright, slender habit; and



without early attention to keeping the shoots within due bounds by stopping, it is very likely to form a loose, straggling plant. It is a native of the Swan River colony, and about King George's Sound, whence it was introduced to Germany, and was sent to Mr. Henderson, of Wellington Road Nursery, lately, from the garden of Baron Hugel, near Vienna, a fertile source of rare and new plants, and which is particularly rich in Australian plants. These, as soon as they flower, if they are of marketable value, are sent to London in exchange for other new plants, roots, or seeds, as the case may be, on the principle of "value for value."

These *Hemiandras*, after all, are but a slight remove from the genus *Prostranthera*, and a gardener might well be excused even if he confounded the species of both genera together. The same kind of treatment suits them; three parts turfy peat, with a little vegetable-mould and light loam, well sprinkled with white sand, will suit the whole of them. The more slender any of the species are, the more sand they need in the compost; whereas the more shrubby kinds require the bulk of loam to be increased. B. J.

THE FRUIT-GARDEN.

THE RASPBERRY.—These have, of course, completely finished bearing for the season, with the exception of the double-bearing kinds, which form an exception as to culture; and the exhausted wood should be immediately removed, in order to render the young suckers firm and well-ripened. It is not wise to neglect the ripening condition even in our hardy fruits, for, if they blossom equally well without attention, there can be no question that the size and flavour of the fruit are in some degree affected in the ensuing year by a little care in this respect. Besides, as to whether the old and exhausted canes are a friend or a foe, a little consideration will show that they incline to the latter. That they continue to take up the ascending sap, or, in other

words, to borrow from the root, is pretty manifest, for on cutting them down they will soon be found to flag or droop, especially in the fresher foliage. But admitting that they continue to produce accretive matter to the plant generally, the trifling amount of benefit this way cannot but be more than counterbalanced by the confusion and shade they produce; we therefore say, cut them away by all means as soon as the last berry is gathered; so we have practised in general. In addition, it is well to go over the grosser canes: all those above six feet high we reduce to five feet or so, not shortening the others at all as yet; this has a tendency to equalise strength, and should be done immediately, indeed, a fortnight sooner would have been better. It will doubtless cause some of them to branch at the top; this we fear not, for at the winter pruning all such are pruned below the branching point, say to about three feet in height, whilst those not topped at the period alluded to, and which consequently have not branched, may be left five feet long. The latter we always top too, but it is done a fortnight later, at least, than the first lot. By this arrangement we generally have two canes five feet long each, and two three feet, the latter the most robust, and it will be readily conceived that such guaranteed the complete clothing of the stump in the ensuing summer with fruitful spray equally divided. This we think far better than the old practice, for in our laddish days, neat gardeners used to pride themselves on having every cane cut precisely to the same height, without regard to strength; but trees were in those times treated as mere wooden inanimate machines. The raspberry-dresser, after cutting as here explained, should not, as some do, take a strand of matting and draw the reserved suckers in a close bundle, as if they were going a long voyage; they should be tied loosely, and, if possible, in small groups, if singly so much the better; this will enable the principal leaves to present a liberal surface to the light.

STRAWBERRIES.—Here, again, we must advert to the propriety of some trimming, even before winter comes. With regard to both the strawberry and the raspberry, there are those who would say, do not be too meddlesome; but the same might be said to the vine-dresser, and, indeed, all other dressers, whose aim is to divert, as much as possible, the bounties of nature to the purposes of man. All runners, not wanted, may be at once trimmed away, but care must be taken not to injure the principal leaves; on which, and their due exposure to the autumnal light, the strength of the future truss, and, by consequence, the size of the berries, mainly depends. There were those who would advocate the cutting off the leaves entirely; but, however such a fallacious doctrine may be broached orally, there are not found those of late who dare advocate it with the pen. Such leaves are of great service, in winter, in protecting the crowns of the plants. Strawberries are in their very nature self-protectors; it is simply the over-officiousness of man that throws the plant into a defenceless state. The very runners which are taken off for new plantations, and which are trimmed so spruce, would, if left in their native bed, have nestled unharmed through the rudest wintry storm, amongst a crowd of other runners, dying leaves, and it may be weeds. In their new plantation they not unfrequently commence with a partial failure, and this is, doubtless, owing, in many cases, to their defenceless condition. Our strawberry potters and planters are, however, perfectly justifiable in their spruce practices alluded to, but they forget or omit the complementary proceeding of covering; some through the fear of trouble, some because littery material looks slovenly, and not a few through forgetfulness, or a non-appreciation of the utility of the practice.

We have before stated that our practice is to mow between the rows in the end of August. Our rows are

parallel, nearly three feet apart, and the operator walks sideways, cutting the inward face of the row next him up the row, and returning, in like manner, up the inward face of the next row. By a nice handling of the scythe, not a score of principal leaves are cut, and after cutting, the dressings are left to shrivel for a few days, when the whole plot is hoed and raked clean. This completes the summer process, and in the middle of October we apply a little manure, and dig between them in a peculiar way, of which a full account in due time. It must here be observed that our aim is to produce the greatest quantity of good berries, as though we were growing for market; mere exhibition, or "show," berries are produced by a different system, on which we will one day offer advice. Soon after the runners are cut down, the plants which remain, having been hedged or shouldered up by the mass of runners, attain a dependent position, and leaf after leaf chase each other downwards. The surface of the entire plant thus defines a semicircle, and this form unfolds and presents the surface of nearly all the principal leaves to the light, and by the end of autumn they become fairly bronzed; thus increasing the amount of accretive matter contained in the crown, that reservoir of the materials which must impart vigour to the blossom trusses in the ensuing spring.

ALPINE STRAWBERRIES.—All runners must be cleared away from these, except a few for stock. Slates or tiles should be placed beneath these, by all means, as they are speedily damaged by wet.

CURRENTS.—The matted Currants must be well looked to, or they will speedily become mouldy. A free circulation of air is absolutely necessary, at intervals, where the close-matting system is pursued. That system, however, is by no means the best, though many resort to it from necessity. A strong canvass, which will at once exclude the wasps, and admit air freely, will be found very eligible. Such, with good management, will also prove more economical in the end; few things are more expensive in gardening machinery than Russian mats. It must be remembered, that it is not the exclusion of light that has anything to do with their firm preservation: with retarding, at a certain period, it has; but keeping and retarding must be kept somewhat separate "in the mind's eye." They will sometimes be carried out simultaneously, and by principles common to both; but in the dark days of autumn, little or no retardation is requisite, and all care merges into the mere conservation of the fruit.

TOMATOES.—Are these a fruit or a vegetable? We are not thoroughly assured which. Mr. Barnes will, perhaps, excuse, if it should appear that we are tampering with one of his liege subjects for a moment. We are, however, dealing with the smaller fry (as a grouse) as fruit culture, and feel disposed to pillage anything to complete our tray of fruits.

In Devon, where the Pine-apple will ripen in the open air; where the Myrtle and the Orange ask for no conservatory protection; the Tomato will, doubtless, ripen well without much fuss. Not so, however, in our climate; some three or four degrees of latitude cooler. No man who has gardened exclusively in the more southern parts of this kingdom can possibly conceive the great difference these three or four degrees make. For our part, we had at least twenty-eight years' experience of the climate around the metropolis in former days, and may add, more than three apprenticeships in that of the North, we, therefore, claim to know both pretty well. But Devon, somehow, brings to mind orange-groves and Italian skies, &c., and to it even London itself must succumb. Tomatoes we have known grown extensively for seed, for "the trade," in our younger days; indeed, many a hundred have we gathered from plants introduced in patches between the nursery-stools and on

borders, more perfectly ripened than we can obtain them in many seasons from a wall in the north.

Like some of our friend Beaton's "bedders," they are but too apt to become overgrown, to run too much to leaf, and means should be taken in the end of damp summers to check this exuberance. Here we always plant them above the ground level, and the plan answers much better than planting below the level. Like high planting with some tender fruits, every little drought speedily tames them; and they, of course, grow shorter jointed, and swell their fruit quicker, for the foliage is neither so large nor so abundant. All blossoms which show after the middle of August we cut entirely away; and at the same time pinch the top from every shoot; reducing, also, every sucker, which they are very prone to produce. If they continue too gross, we cut all the larger leaves in two, about the first week in September; this throws much sunlight immediately on the fruit, and hastens their colouring. About the same period, too, they are root-pruned; all that is necessary is to give a couple of perpendicular cuts with the spade, full depth; after this the plants have no tendency to an enlargement of their frame-work.

It would appear that in their native country, some parts of South America, they are perennial, for we have heard of the same plants being grown in some English gardening establishments a second year with much success; the plants, of course, with abundance of heat, becoming somewhat shrubby in character.

R. ERRINGTON.

THE FLOWER-GARDEN.

COMPANION TO THE CALENDAR FOR SEPTEMBER.—I am glad to see that our calendar for this month is not a heavy one, and what is of it, is of the common blue-apron cast, no philosophy or anything at all that way; and if I can keep to the mark, and not let the pen ramble, we shall have it short and practical all over to-day. Beginning, then, at the top of the alphabet, we have *Aconite* (winter) to plant at the end of the month, and that is the key-note to a host of bulbs and tuberous-rooted plants, which ought to be got into the ground before the month is out. The best way to bring one's memory to the point about this entry, is to make a clear jump over the winter, and set the mind's eye on a bank of *Snowdrops*, and then follow on to the *Crocuses*, *Daffodils*, *Crown Imperials*, *Hyacinths*, *Tulips*, and so on to next June, when the whole family of Spanish and English bulbous *Iris*es will finish the beauty and blaze of "spring bulbs." Now, although each and all of these may remain for another month or six weeks, or say to the last days in October, just as they happen to be at present, whether in the ground or among the dried stores, it certainly is the best practice to think of them in time, and get through with planting them before the frost comes to set us all a potting. A spade is not a safe tool to work with among a lot of bulbs at rest; a garden trowel is little better; indeed, all sharp-edged tools had better be avoided, and a three-pronged fork taken instead; with it all bulbs or fibrous-rooted plants may be dug out of the ground, when, after the bulbs are cleansed from old skins and roots, and are sorted into sizes, they should be, at once, put into the places where they are to flower. If Mr. Fish has got tired of growing the beautiful *Japan Lilies* in the greenhouse, or if he will hand over to us his whole stock of young ones of them, this would be a good time to look out a nice bed for them, and get them planted, too, before the leaves die off; not but that these fine lilies may be put off till next February or March, but this is the proper time to allot a place for them, and if they can be got in all the better. It is quite a national misfortune that we do not

grow these lilies by the thousand in the flower garden, for after a few year's growth, without being disturbed, they would come up so splendidly as to make an annual eclipse all over the garden, instead of once or so in a lifetime, as the astronomers have theirs. Their beds might be kept just as gay as any others while they were growing, and those who forego the use of annuals might have a few choice ones in the lily beds, after crocuses or hyacinths, or, indeed, any of the spring bulbs, were over. But instead of *whining*, let us come to the point at once, and get the good lady of the house to second us, and the thing is done. We have only to watch for my lord being in good humour, and the value of a dozen flowering roots will not go much to his heart; that will be enough to begin with. We shall do them just as Mr. Beaton says; and, "You know, my dear, that having done so much already, according to THE COTTAGE GARDENER, is the real secret of our garden being so much talked about by every one who sees it."

ANEMONES, plant the best. Towards the end of the month, a row or two of turbans should be planted to come in early next April. Some more of them, or of any of the varieties, should be planted at the end of October,—some a month later and some in February and March; but now is the right time to think about what time in the spring one would like to have most of these flowers, and to plant accordingly. The first planted ones will not flower till April, unless it be one here and there; but the bloom may be kept, by this way of successive planting, till the end of June, if after the middle of May the ground is kept well watered and mulched.

ANNUALS.—September is the best time in the year to get in lots of them; those that were self-sown any time in July or August, seldom sprout till the dews and longer nights of this month affect them. If it were not for the annuals, I might just as well have gone to bed when I heard the Prince was coming at the end of June; and I dare say hundreds who had seen the garden that week, and well know what it is to have a good garden, wondered what would become of the garden when all these annuals were over, and some of them were over in less than a fortnight afterwards. But the grand secret of using annuals, is not to trust a single one of them by themselves, except those that remain in flower all the season. Another great point, is to meet this demand on the strength of the beds by a timely dressing of something rich every winter. The best gardeners in England have yet to learn much about annuals. But after the worst planting-out time in the memory of the oldest of us (last May), having got me safely over a difficult pass, and maintained the famed credit of the Shrubland Gardens, I shall never give up singing their praises, if I was punched on the head for it. I have sufficient brass in hand to keep *ding-donging* about them till I shame half of the country, at least, out of their antipathy against annuals. I have learned a great deal about them for the last two years, and I had a notion for a long time that we did not well know the best way to manage them. I am now convinced that not one of them should ever be allowed to flower without being transplanted, except the *Mignonne* and two or three others, unless it were for a very temporary shift. I am also persuaded that it is not safe to follow my own advice, in all places, about the exact times of sowing and planting some of the best of them, for on comparing notes the other day with Mr. M'Intosh about them, I found a considerable difference in our times of sowing, &c. However, none of us can do wrong now to put in lots of them, but for me to say which of them will stand the winter and which will not, or whether it is best to get them in now or let them go till the spring, would be breaking the butterfly on the wheel; all that we know of them is, that some will

endure any of our winters in particular situations, while the same sorts cannot be kept alive in places not far distant. Here all the *Protulaceas*, and little blue *Lobelias*, *Mesembryanthemum tricolor*, *China-asters*, and many others that are thought to be tender, come up every spring from seeds self-sown in the autumn; while some very hardy ones, that are troublesome weeds not two miles off, I cannot keep over the winter at all.

CALENDULA HYBRIDA, a beautiful white, large-flowered annual, which, if left to itself when it is first sown in the spring, will only last in bloom just five weeks. I thinned out a bed of it about the middle of May, when it was half grown, and put the thinnings into beds just planted with white *Petunias*, and into two white *Verbena* beds. The *Calendula* was in good bloom three weeks before either the *Petunia* or *Verbena* made much show; the original bed of the *Calendula* had to be replanted in the third week in July; but some of the plants, not choaked by the *Petunias*, are in flower now; and if all the seed-pods had been carefully picked off as soon as the flowers faded, I think *Calendula* would dispute elbow-room with the white *Verbena*, but the *Petunias* were too strong for it. At the very end of last April, I found myself short of about five hundred plants of something low, not to be more than a foot high, and I was restricted to a good rich pink colour; so that I might have had five thousand plants of the required height, but without being of that particular colour I could not bring them into the new design which was proposed just for the front of the Albert Tower. Now, I am not sure that if I had found out the philosopher's stone, that it could bring me so easily out of this fix, as did a little annual which, then for the first time, I thought of, and which has since surprised me much. All that I could scrape together of the low pink desired, was about a hundred good plants of the *Pink ivy-leaved geranium*, and half as many of the *Diadematum rubescens* geranium, but this variety is too reddish to pass for a pink, but a drowning man will catch at a straw, and I fixed on a new seedling *Diadematum*, of which I had about thirty plants, the one I call *Regium*, it is not a pink more than the *D. rubescens*, but the two put together would cast a pinkish shade over the bed, and for the rest I relied on my little annual. Every one of the pink ivy-leaf produced three or four cuttings of very young growth, and these I knew could be brought out in about a month; but for me, who preach so much about planting beds quite full at the first going off, to wait a month for these cuttings would be equivalent to a violent tooth-ache for the whole month; so the pink-beds, four in number, were filled brimful with the *Eucaridium grandiflorum* after the geraniums were put in as an apology of planting. The *Eucaridium* was sown at the beginning of April; and for those who do not know it, I may say that it is like a purple *Clarkia* in miniature, only the colour is nearer to a pink. There was not a gayer set of beds in the county at the end of June, and they are at this moment, say the end of August, as gay as ever, and one cannot tell which is master of the beds, the geraniums or the *Eucaridium*; but the latter, a delicate little thing though it be, would have the best of the game had the knife been spared. The bed from which the *Eucaridium* was taken was done as soon as the *Calendula* bed, and its usual time of flowering with us is just doubled, and there are no signs yet of the least fading about any of the plants. I could fill this *Companion* with similar instances now under my eye, but it would only be a repetition of these two.

Who has kept the *Clarkias* in bloom from the first of June to the middle of September—that is, the same plants? I have them so just now, and I think the purple will last to the very end of the month. Am I not, therefore, justified in writing so earnestly for the revival of a selection of the best annuals? But still I

would not plant them but as helpers to cover the ground in May and June, and carry on a bloom through these months—generally the mid-winter of nine-tenths of our British flower-gardens. It is of no use to tell me the thing “can't be done.” Every person about this garden was as busy last May and June as if about a house on fire; besides a very bad planting season, two hundred of workmen tearing and pulling about everything they could lay their hands, or great lumbering feet, on, to help up the tower and what-not. You could not turn a corner in our best front garden without encountering a great horse, with a Scotch cart full of mould or bricks, stones, sand, gravel, and all manner of things, or, perhaps, half a dozen of them in couples, pulling away at a huge iron girder, or piece of stone, big enough to frighten one. Yet, with these drawbacks, by the help of annuals, the garden was gay; at least, the beds were so all the time. The annuals which shone in May were sown last September, and those, or at least the most of them, that bloomed in June, were sown from the 20th of March to the 10th of April. I said last year, when I heard of the usually very foolish arrangements of the British Association, that I got my leg into a tight boot; it went off and on, however, as easily as an old glove. But we must give these associationists a touch of cottage economy, and tell them quite plainly, that if they want to pick up “useful knowledge” in earnest, they must learn to put off their sittings till the House of Commons arranges the business of the session, and before the sporting folks are off to the Highlands. But to our craft.

Every CUTTING for the next year should be in and rooted as early in the month as possible; cold frames are now the best places to put geranium cuttings in without pots, and with good protection they may remain as we now leave them till next April. *Calceolarias*, in close cold frames, without pots, and with one inch of sand on the top, is our arrangement; the plants to be potted in November. *Verbenas*, all in pots, first in close cold frames, about the beginning of the month, and a little heat by the end of September, if they seem to be lagging behind. No flower-garden cutting should have much heat in the autumn, it brings on mildew and all manner of evils before the winter is over. If the whole stock were ready in time to stand out of doors, or with the glass lights off for a short time before it is too cold, they would run far less risk in winter than such as are unnaturally blanched in close heat, to get them up in a hurry, when the propagation is put off too long. If the smallest sized pots are now put under *Verbenas*, as they do with Strawberry runners for forcing, I believe, after all, it is the best plan; any time in October would do to take up the pots full of roots, and by giving them a shift as soon as they are taken up, then put into a cold frame, they will make fine stocky plants before winter.

D. BEATON.

GREENHOUSE AND WINDOW GARDENING.

A FEW MORE LEGUMINOUS (PEA-BLOSSOMED) PLANTS.—As contrasting plants to the *Hoveas* of last week, I shall now mention a few good old things with yellow flowers, and, first, the

GOODIA LOTIFOLIA (Lotus-leaved G.).—The genus was named in compliment to Peter Good, a collector for the Botanic Gardens at Kew. The species mentioned has been in the country the best part of sixty years, but a nice specimen of it is not the less beautiful on that account. The habit of the plant, if not drawn spindly for want of light and air, is rather elegant, though the shoots are somewhat long in their mode of growth. The leaves are small, generally in threes, and lotus-like. The flowers are large, and a good yellow, with the base

of the standard of a reddish colour. The plant blooms freely, when from two to four feet in height; being at the latter height considered a full-grown specimen, that must be looked upon as having fulfilled its duty, and, ere long, to be superseded by a younger rival. They generally bloom from March to July, but can easily be made to yield their blossoms from December until that period. I am not aware that there are more than two other species of the genus, differing little except in the foliage of *Pubescens*, and the dwarfer habit of *Polysperma*, occasioned partly by the freeness with which it produces its seeds. As we must now be thinking of early spring decoration, those little plants will be worth looking after. All things considered, where one is to be chosen, I would prefer the *Lotifolia*. The management of all is similar.

Propagation by Seeds.—If these ripen early, they may be sown in summer in a slight hotbed. If not over-ripe, they will vegetate all the quicker, and will require no previous soaking in warm water. Many seeds that take a considerable time to vegetate when thoroughly dried, will germinate *quickly* and *strongly* when in a comparatively green state. The old gardener who carried his fresh cucumber and melon seeds in his waistcoat pocket for months, was no dotard, though very likely he would chuckle at the glib philosophy of our enlightened age. It is easier to excel in giving plausible reasons than to excel in practical results. Every day that the seed was being kept near the heat of the body, it would become more indurated; germination, therefore, would be more languid, and growth less vigorous, owing to the slowness with which those chemical changes were effected in the seed, which are necessary to the support of the embryo plant. A stubby growth was desired, and so far was obtained. Young shoots, on the other hand, germinate the quickest, and produce the strongest plants, just because such changes as that of starch into sugar, &c., &c., are so quickly made. When, after keeping hard seeds over the winter, we steep them for a day or two in warm water, it is for the purpose of bringing them back to a similar condition to that they previously occupied before being removed from their shell or pod. Seeds, however, not over-ripe, and those ripe and dried, but well soaked before sowing, should be placed in soil, in a *medium* state between wet and dryness, and should receive little water until the young plants appear.

By Cuttings.—The points of shoots half-ripened, or side-shoots taken off close to the stem, when three inches in length, are the most suitable. Insert them in silver sand, over sandy soil, and in pots well-drained. If taken off in April, a bell-glass placed over them, and set in a warm part of the greenhouse, or better, in a close pit, where the temperature from artificial means does not exceed from 55° to 60°, and shaded from bright sunshine, they will be fit to be pricked off, three or four in a pot, by the end of summer, and have the autumn to establish themselves: stopping them all, however, as soon as fresh growth commences. By shifting them early in spring, and growing them on during the summer, they will make nice little flowering plants the second season.

General Management.—During the first season, as growth is the principal thing, the plants will do best if kept in a pit during summer, and kept close after the one or two shiftings they receive, removing them into open air in August and part of September, to harden their wood properly. In future seasons they should be pruned back after they have done flowering, though not too severely; be encouraged to make fresh growth afterwards by keeping them closer, and in a moist atmosphere; receive what attention they require at the roots, when fresh growth has fairly commenced; and be kept under cover after potting until growth is again proceed-

ing, when the plants may be exposed in a sheltered place out of doors, where they will not be subject to boisterous winds, nor yet to worms getting into the soil. Even less care than this will do, but the plants will thrive all the better with it, and it will always be requisite where early blooming is required.

Watering.—Weak manure-water may be given with advantage, when growing, and when flowering; and syringing should be resorted to morning and evening in summer, and the middle of fine sunny days in winter.

Soil.—Fibry loam and sandy peat is best; good loam and a little leaf-mould, and a few nodules of charcoal will grow them well. The more loam is used, the stubbier will be their growth; for shifting strong plants it should constitute the principal item; of course drainage is indispensable.

Temperature.—If the wood is well-hardened in August and September, they will stand a low temperature for short periods uninjured. It will be unnecessary to give artificial heat for this plant alone, if the temperature ranges in winter from 35° to 45°. A shady situation will suit it best in the dog-days, and a full exposure in the end of August and beginning of September;—when grown in pots, they should be placed under shelter in October, and be removed to their winter-quarters by the middle of that month.

Insects.—The red spider is their chief enemy. The best remedy is flowers of sulphur in winter and spring, steamed from a hot-water plate, and syringings with clean water and weak soap-suds alternately in summer.

As successors to these, because blooming a month or two later, I may mention the

CROTOLARIAS, such as *argentea*, *obscura*, and *Thebaica*, all low growing shrubs, flowering when from eighteen inches to three feet in height, and producing large yellow flowers, of the pea-blossomed character, and requiring similar treatment, in every respect, to the *Goodia*, only that the *Crotolaria* is even more subject to the red spider.

BOSSIAEA.—This is another beautiful commemorative genus, the species of which are chiefly from New Holland. All of them flower freely when from fifteen inches to three feet in height. The prevailing colour is yellow, though in some cases it is orange, and in others a mixture of brown, yellow, and purple. One of the last introductions, *Hendersonii*, is a bronzy yellow. The individual flowers are generally small, but from the habit of the plants, they show off to the best advantage. They generally bloom from April to August, sooner or later, according to circumstances. June may be considered the hey-day of most of them. In THE GARDENER'S DICTIONARY will be found a list of the best sorts, and a full third of these I have not seen. The chief characteristic of the genus, is the possession by most of the species of flattish, compressed branches, something resembling in appearance the *Acacia armata*, to which we lately adverted, only that the colour of the stem of the *Acacia* is a very light, while that of the *Baronia* is a dark green. Another peculiarity between the species is, that whilst such sorts as *ensata* and *rufa* are, properly speaking, destitute of foliage, such species as *foliosa* and *microphylla* possess leaves. Unless for particular purposes, the species mentioned are as good as any other; *scolopendrium* grows to eight or twelve feet in height, and *prostrata* and *cordifolia* from six to twelve inches.

Distinctive Features of Management.—**Propagation:** the same as for *Goodia*, only that in the case of the leafless species, after the cuttings have been inserted for two or three weeks, the pots might be moved into a slight, sweet, bottom-heat. After-treatment the same.

Soil: two parts peat to one of loam, with sufficiency of silver sand and nodules of charcoal to keep the soil

open; pots to be well drained; more loam may be used as the plants get older.

Temperature.—This in winter should seldom be below 40°; 40° to 45° may be considered the lowest range of the thermometer. In summer they will do better in cold pits of brick, or turf, or any means that will protect them a little from the sun's rays, which act more injuriously upon the roots than upon the tops. In an open place plunging could be resorted to.

Insects.—The white scale is their great pest, and must be removed by washing, or covering it with gum, &c.

CALLISTACHYS.—The species are chiefly New Holland plants, and of these *ovata* (egg-shaped-leaved), *retusa* (jagged-ended-leaved), *cuneata* (wedge-leaved), and *lanceolata* (spear-head-leaved), are nice little shrubs, of rather upright habit, growing to the height of from two to four feet, and producing beautiful spikes of large yellow flowers. Main features of management similar to the above; the soil should be rather better than two parts peat to one of loam, light, rough, and sandy; pots well drained; plants carefully watered; pruned when done flowering; encouraged to grow before taking them out of the house, and kept, if possible, in a brick or turf pit during the summer, if they cannot well remain in an airy part of the greenhouse. Where such conveniences can be got, the latter, namely the turf-pit, is the best, as there is less reflection of heat. Forty-five degrees must be looked upon as the medium lowest winter temperature for these plants. I am not aware that they are particularly subject to insects.

I had intended to have mentioned some of the peculiar features in the management of some other yellow, pea-blossomed plants, such as *Oxylobiums*, *Patolobiums*, and other "lobiums," but must defer them for the present. Those I have mentioned may be considered next in hardiness to the *Genista* and *Cytisus*, formerly alluded to, and the first-mentioned to-day are the easiest grown.

R. FISH.

HOTHOUSE DEPARTMENT.

EXOTIC ORCHIDACEÆ.

PLANTS THAT THRIVE BEST IN POTS—(Continued from page 321).

PHAIUS CULTURE.—This fine genus of orchids are all terrestrial, that is, they are found in their native habitats growing on *terra firma* (the ground); and the term *terrestrial* is used technically, to distinguish them from such as grow on trees, or on bare rocks, these being named *epiphytal*, growing in the air. It follows, that a plant found growing on the ground requires, in artificial culture, a soil approximating to that from which it has been brought. The soil, in woody dells, in the Mauritius, China, Nepaul, and other places where they are found, is generally of a loamy texture, but the surface is composed of the *debris* of the trees of the forest for generations, consisting chiefly of leaves, twigs, and branches in a decaying state. In order to imitate such a soil, we have used always for these plants a compost of loam and leaf-mould, not too much decayed, and sand sufficient to keep it open, with perfect success.

Drainage is a point of considerable importance in the culture of Phaii. As on account of their rapid large growth, they require generally large pots, the drainage should be in proportion. Cover the hole or holes at the bottom of each pot with one large piece of broken pot sherd, or an oyster-shell; prop this up with a small piece of pot, thick enough to allow a free passage for the superfluous water; then place over them a layer, one inch thick, of smaller broken potsherds, and over them a layer, half-an-inch thick, of the smallest size, without any dust amongst them (this should be sifted out with a very fine-meshed sieve, and will be useful to mix with

the compost for dry stove or succulent plants); cover these finally with some bog moss, not too thick, and then the drainage will be perfect.

Potting.—The season for this operation depends upon the state of the plants. If properly managed with regard to the season of rest, they should begin to grow about the middle of February, and then is the time to set about potting. Take the plant or plants to the potting bench, turn the pot upside down, catch the ball with one hand, and remove the pot with the other. Give the ball a gentle tap on the edge of the bench to loosen the soil from amongst the roots, and then dress the plant all over; trim off all dead or decaying roots, cleanse the pseudo-bulbs from old sheaths, insects, &c.; dead or decaying leaves cut off at once, and sponge the fresh living ones with tepid water, cleaning off and destroying scale, bug, or any other vermin infesting them. If it is desired, now is the time to divide the plants for increase; one or more of the back or oldest pseudo bulbs may be cut off just at the connecting joint, these should be potted into small pots, and have no water till fresh shoots are made. Should very large specimens be desired, these divisions may all be put in the same pot together, and allowed to grow together till they flower, and thus form one large, fine specimen. To return to potting; after the plant is well cleansed and divested of all dead and decaying matters, proceed to pot it; first, put in the new pot a slight layer of earth upon the drainage, then work in the long wiry roots equally all round and in the pot, then hold the plant in the centre of the pot with one hand, and gradually mix the earth amongst the roots with the other; this will take a little time and care to do it well, without injuring the roots or thrusting them together in bundles,—the endeavour and aim should be to leave the roots equally spread out amongst the new soil. Finish by leaving the plants level with the rim of the pot, press down the soil at the sides next the rim to hold a fair supply of water, and the operation is finished.

Position after Potting.—The best position is a mildly-heated bed of tanner's bark, either in a pit or in a common pine stove. The nearer they are to the glass, so as not actually to touch it, the better. They should be well shaded with a canvass shade, that will shelter them from the rays of the sun in summer, but remove it in winter; the leaves are thin, and are easily disfigured if exposed during summer to its rays. Give air moderately on all fine days, but not too much at once.

Heat.—Excepting *Phaius grandifolius*, they all require a high temperature when growing, 75° to 85° by day, and 65° to 70° by night. In winter, the heat should be very moderate, because then the plants are at rest.

Water.—If the plants are plunged in a bark-bed, they will not require so much water as they would if grown on a platform over the pipes, or on a stage in the centre of the house. Water, then, according to the position the plants occupy, only take notice that too much water at any time is highly injurious, and will cause the roots to perish very suddenly. In the resting season, scarcely any water will be required, only enough to keep the leaves from flagging too much. Some lose their leaves entirely once a-year, *Phaius albus* for instance; such will bear scarcely any water when at rest. The syringe may be used freely when the plants are growing. Allow the water to fall upon the leaves like a gentle Scotch mist or drizzling rain; but when using it to the underside of the leaves, give a little more force to wash off the red spider, should he have founded a colony there.

The Season of Flowering.—As the flowers of the greater part of the genus appear at the same time as the new growths, it follows that they will flower in the early part of the year, generally about the end of

April to the beginning of June; *P. albus* being an exception, because its flowers appear at the summits of the present year's shoots. *Phaius grandifolius* may be so managed, by starting it into growth at various periods, as to greatly prolong the season of its blooming. We have had it in flower from January to June, by starting a plant or two at a time, at intervals of a month between each period.

Season of Rest.—Like their epiphytal compeers, the terrestrial orchid *must* have a season of rest; and as light is necessary to grow and mature the growth, it follows that the best season for repose is when there is the least amount of light in our climate, therefore, the winter months are the best for placing these plants to rest.

T. APPLEBY.

FLORISTS' FLOWERS.

MR. GLENNY ON FLORISTS' FLOWERS.

G. BRITTLE.—The flower was so knocked to pieces that it would be impossible to do justice without seeing it again. We observe that the base of every petal is yellow, but not so far as to show us part of the bloom. The centre and face appear very good; and, as far as it is possible to judge, the flower will be an acquisition.

BLOOM OF THE KING OF THE DAHLIAS arrived safe and well. When the trade think proper to cry a thing down, as they did *Princess Radzville* because it reflexes, it may pretty safely be depended on; if that be the only point deficient, it cannot be second-rate. It is the fashion to cry up cupped petals, because they bear dressing; and the best dresser stands higher than the best grower, according to modern showing.

NIL DESPERANDUM, a fuchsia of Mr. George Smith's, is a pretty reflexing red and purple variety, of good habit, and appears to hold its colour a good while, that is, the purple stands well; it reminds one of *Exoniensis*, but greatly surpasses it, with a habit fully as good.

DUKE OF WELLINGTON, Hollyhock, one of the best guard petals of the whole family, remarkably thick; but being a Scotch flower, the English cultivators like their own better. It is a rough flower, but the petals are like leather; and it will be grown most by the very people who find fault with it. We noticed it at the Surrey Gardens, and since that at the National.

A curiously speckled-and-striped DAHLIA, purple with white marks, neither name nor address, a better than average form; but I query if the centre will continue good. The flower was showable, but in the last stage; outline better than average, symmetry fine, petals well cupped, and the edge gracefully turned over. We must see it again; perhaps we may know where to see it growing.

PICOTEE (*J. O., Mansfield*), very clean, and likely to be useful; the principal fault is, the guard petals are not so bold as they ought to be, and the petals generally too narrow; still it makes a good useful variety, and has one great advantage—a good pod that scarcely needs tying, which is a great desideratum.

The single flower of FUCHSIA does not exhibit any advance upon several we already possess; somehow the raiser contrives to send them in very bad condition. The first was shrivelled up altogether, the last was nearly so; perhaps the blooms are gathered too old.

FLORISTS' FLOWERS CULTURE.

THE CHRYSANTHEMUM—(continued from page 322).

Propagation: by Cuttings.—There is no plant that strikes root more readily, or more quickly, by cuttings, than this. The best are made of the young tops an inch long; and the best time to do this is in March. They may be managed two ways, either put them singly into

two-inch pots, or place a number round the inside of a five-inch pot. Use sandy loam to strike them in. Place them in a frame heated slightly, and shade from the sun for a few days. They will quickly root, and should be then potted off, and replaced in the frame, if in five-inch pots; but if singly in small pots, they may be placed in a cool frame as soon as they are rooted, and repotted when the pots are filled with roots.

By layers.—This is a good method to obtain very dwarf plants, which are useful for the front of the stage or the side platforms of a greenhouse. Here, again, the facility with which the Chrysanthemum roots renders this an easy and certain successful operation. Plant a few old plants out of doors, in a row, or otherwise, as you please; let them grow as wild as they choose till the month of July; then take as many pots as plants are required, and plunge them, filled with some rich soil, into the ground, at such a distance from the plants growing in the ground, as will allow the tops only, when bent down, to reach the pots; bring them carefully down, and lay a small stone upon each branch to keep it steady in its position in the pot. Leave about two inches of the top out of the soil. If the shoot is branched it is well, but if not it must not be topped, because there is some danger that the layer may continue to grow and not flower, if lopped so late in the season. In truth, the success, end, and aim of this way of propagation, is to get them to flower very dwarf; and, therefore, there would be no objection, indeed it would be desirable, that the layer should have buds upon it just visible at the time when the layering is performed. Keep the soil in the pots moderately moist till roots are formed, and after that water more freely. When it is certain that the layers have made plenty of roots, cut them off from the parent plant, and remove them into a frame or pit deep enough to receive them. Should they flag during the day, give a sprinkling of water, and shade for a day or two till they recover; then give air and water freely. They will be then nice plants, about a foot high, with, perhaps, six or ten flowers on each, and they are really pretty useful things.

By Seed.—The grand secret of raising improved florists' flowers, is choosing the sorts to save seed from. Now, if in Chrysanthemums we desire to improve a quilled variety, like *Fleur de Marie*, it would be a folly to expect it if the seed was saved from a flat-petalled variety, or *vice versa*; if an improved cup-shaped or flat-petalled variety is desired to be improved, the seed must be saved from a flower possessing these properties in the highest and best degree, and not from a quilled or tasselled variety. (There is beauty and elegance in both varieties, and the flowers should be divided in two classes at exhibitions, and receive awards, not together or in opposition, but in separate stands. The quilled varieties to form one class, and the flat-petalled varieties another, both to be considered equal). This being duly considered, and the flowers determined upon to save seed from, they should be protected from wind, rain, and insects; their own pollen should be dusted upon the stigma; and the seeds gathered as soon as they are ripe, and sown in the February following in a gentle hotbed, in shallow pots, and light sandy loam. When the seedlings are high enough to be handled, transplant them into the smallest pots, and repot as soon as the pots are moderately filled with roots. They will make great progress during the summer if treated exactly in the same manner as described for the cuttings, and many of them will flower the same year. In the northern counties Chrysanthemums will not bloom quite satisfactorily in the open air; it is necessary to give them greenhouse shelter early in October. There they should have plenty of moisture, both at the root and over the branches, especially when first placed there from out of the cool, moist evenings of autumn. Abundance of

air must also be given every day, and night too, when sufficiently mild. In the southern counties, these flowers will bloom exceedingly fine in the open air, especially if planted against a wall. We saw, last autumn, in a garden belonging to the celebrated Mr. Tattersal, near St. George's Hospital, Hyde Park Corner, several walls, from four to five feet high, completely covered with Chrysanthemums, and exceedingly well-flowered. This example may, with good effect, be imitated, for it seems that this plant will bear the smoke of a large city or town better than many others. As a matter of course, if intended for exhibition purposes, they must be grown in pots, even in the warmest county in England.

T. APPLEBY.

THE KITCHEN-GARDEN.

Angelica sown, in drills, in the end of July or beginning of August, should be thinned in due season, and all gaps filled up by transplanting; if sown in a bed, the plants should be carefully lifted, and planted on a well-prepared piece of ground, in rows four feet apart and two feet from plant to plant in the rows: a very few plants well managed, by frequent surface-stirrings and the application of liquid manure, will produce a sufficiency for the use of a large family.

Globe Artichokes—the stalks and old leaves should be cleared from those which have been producing all the summer, and the growth of suckers encouraged; the spring-planted, which will now be producing their heads, should be supplied with liberal soakings of liquid manure. Any old plantations not likely to be required next year, it would be advisable, of course, to grub up at once, trenching the ground into sloping banks for planting early *Cabbage*, *Lettuce*, *Endive*, or *Cauliflower Plants*.

Basil and *Sweet Marjoram* should be pulled for drying as soon as in bloom.

Cabbage Plants of all ages and sizes should be pricked and planted out as soon as they are large enough, and the ground is in readiness for them, keeping the surface-soil well scarified in suitable weather. As to *weeding*, which we so often observe recommended in garden calendars, we detest the sound of the word, knowing so well, by many years practice, that even allowing a weed to make its appearance is a decided robbery in more ways than one, for not only do the weeds take up part of the nutriment of the soil, but, if allowed to grow to any size amongst dwarf growing crops, they prevent a free circulation of the atmosphere, so essential both to root and stem, to say nothing of the time wasted in clearing or hoeing weedy crops, or the unsightly, neglectful appearance that weeds have when growing amongst them. We are far from recommending an attempt for the entire extermination of weeds from the soil, as we well know all things are sent for use, and that all may be turned to good account; but let them be kept away from gardens and crops, and let those who are fond of our British plants spare a corner to cultivate a few of each separately.

Commence planting *Endive*, on nicely-made sloping banks, also tall autumn and winter *Lettuce*. Sow *Rudishes*, a few and often, also *Small Salading*. *Normandy Cress* may now be sown to stand the winter. *Tomatoes*, keep well topped in; do not allow any leading or side shoots the opportunity of robbing the fruit; gather the last setting of small green fruit for pickling, for which they are well adapted, and as the season is getting late they are not likely to ripen. Care should now be taken with late *Cucumbers* and *Melons*, not to apply water in too great abundance; air early of a morning, and shut up early in the afternoon.

JAMES BARNES.

MISCELLANEOUS INFORMATION.

OUR VILLAGERS.

By the Authoress of "*My Flowers*," &c.

WE sometimes meet with rather romantic incidents among "the short and simple annals of the poor;" circumstances that would interest us deeply if they took place among the elegant and educated, but which pass unknown, or scarcely noticed, when the subjects are poor, and wretched, and uncared for.

Yet amid all their unostentatious romance, there is a powerful voice that rings even in "ears polite," if they are not stubbornly closed against it, a "word of exhortation," to which it would be well if we took heed. If we gave part of our attention to the humble population around us, we should have the power of doing much—particularly if blessed with "this world's good"—of softening much of the sorrow which is the heritage of fallen man, and we might ourselves be greatly profited. We should see many things that would strongly interest our hearts, and we might gain instruction that would be of far more value than all the gifts our hands could bestow on others.

A lady, who formerly resided in our parish, largely experienced this. She had a heart, and a purse; and her delight was to go among the poor and friendless. She had carriages, and horses, and servants, and luxuries; but she was never so happy as when wrapped up in her country cloak, and, mounted upon pattens, she defied all weather, and made her almost daily tour among the cottages. She had ample scope. Her pretty residence stood so close to the neighbouring parish, which was a very large and poor one, and in which only one gentleman's family lived, that Mrs. B—— considered herself engaged to assist all who stood in need, without restricting herself to person or place.

Soon after Mrs. B—— took up her residence amongst us, her attention was drawn to an object that would have dis-

gusted some fine ladies, but which greatly interested her. It was an old decrepid woman, whom she saw creeping about the hedges and ditches, covered up with an old gray cloak, and the tattered remnants of a bonnet, which was so placed on her head that the brim rested on her breast, and nothing was seen of her head and face, except the crown of a very dirty cap, which stood out just above the collar of her cloak. She was usually picking up sticks, and groping in heaps of dirt and ashes, and her apron was filled with some miserable treasure as dirty as herself.

Mrs. B—— inquired about her, but no one knew anything to tell. She had no house—no home, and was only seen poking about, neither noticing, or being noticed; no one looked after her temporal good, and "no man cared for her soul." Mrs. B—— waited for no further information.

Poor old Sally at last heard the voice of kindness, as she groped in her accustomed haunts; and her head was raised for a few minutes to reply. In a short time Mrs. B—— learned the particulars of her little history, and they were afterwards fully confirmed. She had once been young, and handsome, and happy, and by no means in the lowest rank of life. She was, in fact, an apprentice to some humble country milliner, and her knowledge of forming artificial flowers was in after years of some advantage to her. She was left at an early age with one son, whom she contrived to support, for her friends had deserted her, until he was old enough to gain his own bread, and then he left her and went to sea. For years she heard nothing of him—long and weary years; during which time wandering and wretched habits of life grew upon her, until she became the bent-down, dirty, forsaken being I remember her.

The outward appearance of poor old Sally improved under

the resolute hand of her benefactress; but it was sad uphill work. She could not bear to be clean or stationary; and the attempt to place her with respectable people in a cottage, signally failed. She could not sit still, or bear to do as they did; and she loved best to roll herself up in the first shed that offered itself, and spend her days in miserable independence.

One day, a very respectable middle-aged man arrived at the village, and made diligent inquiries after this poor old creature. A search was set on foot, and she was brought out of some wretched hovel, all dirt and decrepitude, to receive her son! How they met, and how they parted, under such astounding circumstances on both sides, must be imagined. His distress and dismay was great, but his stay was obliged to be so short, that he could only leave his directions with a friendly neighbour, and return hastily to his ship. He left money for her use, and declared his intention of making her a handsome weekly allowance, that she might enjoy the simple comforts of life in her declining years; but it all came too late to give pleasure. The joy of meeting her long-lost son was the only feeling she experienced; and the hope of seeing him again seemed to take full possession of her mind, but as to cleanliness and home comforts, they were odious to her still.

Mrs. B—— at length procured her a little morsel of a cottage; in fact it was but one room; but it was all to herself, and she could go in and out at her pleasure. There her kind friend contrived to keep her, and did all she could to make her live like a human being; but as to spiritual impressions, she was dead and insensible. Her son was the one only futurity on which she fixed her poor, dim mind; and like all earthly futurities, it cruelly failed her. He never came again. Once only a remittance arrived, according to his promise, but from that hour to this, he never either came or sent; and his poor mother longed and lingered month after month, and year after year in vain. Now her earthly cares are ended; she sleeps in a narrow cell; but she knew nothing of spiritual hope or fear, her mind could not take them in, and the feeble lamp went out in terrific unconcern.

What a warning to us all! The interest of the simple narrative seems lost in the awfulness of the lesson it conveys. A youth spent without God, an old age passed without repentance, lead to a death-bed without consolation or hope. We may not be such loathsome objects to our fellow-men as poor old Sally; but in the sight of God we are the same. We may have neat and respectable clothing, we may wear stars and orders, and gold and ermine, but unless we have on the Lamb's "wedding garment" too, our death-scene will also be *without consolation or hope*.

OBTAINING NATURAL FLOWERS IN WINTER.

CHOOSE some of the most perfect buds of the flowers you wish to preserve, such as are the latest in blooming, ready to open; cut them off with a pair of scissors, leaving to each, if possible, a piece of the stem about three inches long; cover the end of the stem immediately with sealing-wax, and when the buds are a little shrunk, wrap each of them separately in a piece of paper, perfectly clean and dry, and lock them up in a dry box or drawer, and they will keep without corrupting. In winter, or any other time, when you would have the flowers blow, take the buds over night, cut the end of the stem, and put the buds into water, wherein a little nitre or salt has been infused, and the next day you will see the buds open and expand themselves, and the flowers display their most lively colours, and breathe their agreeable odours.—THOMAS JONES, *Seedsman and Florist, Chetton, near Bridgenorth*.

[As this comes to us with a signature, we insert it, but we do so without expressing any opinion as to the efficacy of the direction. It is easily tried.—ED. C. G.]

PLANTING.

THE philosophy of vegetation is very beautiful, and the science of vegetable physiology very wonderful; but without entering into these abstruse and mind-absorbing techni-

calities, I wish to show, in a common-place point of view, the practical means and observations on planting, as they forced themselves upon a person possessed, I hope, of the qualities which enable him faithfully to record them. I could wish this little treatise to be a sort of planting-made-easy, palpable to every unprejudiced person; and to convince that the planting and management of a fruit-tree is not a thing to be frightened at, yet, at the same time, to impress that its management is not to be undertaken without an amount of prudence and forethought.

A few years ago, I had just completed planting some young forest-trees in a church-yard, to shut out a farm building which bared its front rather too boldly opposite my employer's entrance gate, a tall man passed by that way, who, with a copious current of contempt, sarcastically observed—"I wonder who we shall get for woodmen next?" alluding, I supposed, to his own profession. I *wondered* so too, and at the same time thought I should have liked to have been one vastly, for it appeared an easy, lucrative employment—very.

From November to March is the proper period for planting deciduous trees, though, if done before Christmas, you are in the enviable situation of the early bird.

The roots of trees take the precedence, and naturally go before the branch; if this is doubted, take a spade, cut a trench on the outside of the circumference of the branches, and deny that the soil is not intersected with young fibres, and also deny that the young fibres or spongioles are not the principle feeders and mouths whence the sap is conveyed to the roots, which, traced from the spongioles to the bole, become large by degrees, till their chief end and design is strength to support the natural structure, enlarging annually above them, and main channels to supply the nourishment of the tree. The large roots are comparatively useless as food-producers. Here is a beautiful adaptation of the means to the end, which could be enlarged upon to the bulk of a volume.

As Mrs. Glasse, of famous memory, would observe, first *take up your tree and then plant it*. Suppose a young, healthy tree arrived to you with the roots cut and mangled with the spade, or otherwise, from the careless and rude manner in which it has been forced up (I will not say taken up) from its nursery, with its branches flourishing to their fullest extent. Now, does it occur to one individual out of a hundred, that the branches of a tree (if its removal is contemplated) should be shortened one-third, if a small one, and one-half, if a large one, six weeks, at least, before the sap has done circulating in the autumn? The roots in this case would, before it was removed, fill every bud to bursting, and sap-vessel to overflowing.

In proceeding to take up a tree for the purpose of transplanting, whether a large or small one, begin at the extremities of the roots (or otherwise, so to speak, in order to adopt a system, in a circumference with the outside of the branches); dig a narrow trench completely round, let the depth be guided by the roots, and so open as merely to admit the breadth of a shovel; now, with a three-tined fork, and a pecker, gradually work away the soil from the roots, and shovel it out from the trench, to make way to work freely, and not become "muddled up," as you carefully trace the roots towards the stem of the tree.

The quantity of soil left adhering to the roots towards the bole depends upon the power and convenience you have of removal; it is a good practice always to leave a certain portion, and if the tree is very large a considerable quantity. Handle the small fibres as tenderly as you would an infant; every large root that shows a propensity to grow *downwards*, must be sawn off and the wound smoothed with a sharp knife. The merest novice will understand me, I hope, when I reiterate and impress—every root possible, with the exception of tap-roots, must be carefully preserved. If trouble is an object in the way, leave the thing alone altogether; far better allow a space to remain unoccupied for other useful purposes, than to see "a half-dead-and-alive monument, lifting its poor wizened prow," pointing as a mark of contempt, at your not having performed the operation in a skillful manner, and thus outraged nature.

The previous diminution of top, mentioned above, being in ratio with the roots now the tree is taken up (for, take a tree up however carefully you may, a considerable number

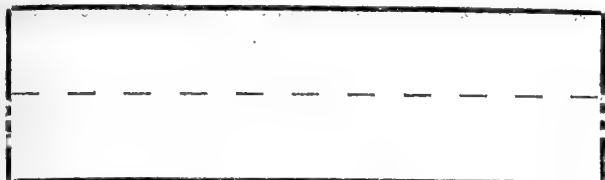
of roots must go), the hole and remaining parts of the branches being well provided with sap, have sufficient nourishment when the first genial weather sets them moving in spring, independently; and ere the evaporation of the new leaves has exhausted the reservoirs, the roots are at work again, and not a check, comparatively speaking, takes place.

Look on this picture, and now look on this! The sap of all trees naturally flows to their extremities, and if these extremities are left till the time of transplanting, to be then cut off, of course away goes the present nourishment, and the tree must remain in a state of impoverished inanition till such time as new roots are formed; vegetation consequently receives a check. How much worse to leave the head on a newly-planted tree entire; this would cause a check with a vengeance! UPWARDS AND ONWARDS.

(To be continued.)

MELON CULTURE.

As some of your readers, like myself, may have been puzzled and foiled in growing some of the more delicate species of melons, I shall trouble you with an account of a plan that I have seen carried out successfully the last two seasons by Mr. Mackelvie, at Stevenston; and although the idea in its details is originally his own, like all men of sound talent, he freely places his invention at the service of the public. Few words will suffice to describe. The frame is constructed six inches deeper than usual; a slight ledge, or detached block, run round the interior, at eighteen inches from bottom; and on this ledge, or series of blocks, rests a trellis (horizontal, of course), on the upper surface of which the plants are trained. At the back, or upper side of the frame, there is a sliding panel, immediately beneath the trellis; thus affording the means of weeding, and the all-important business of syringing the surface of the soil, without endangering the fruit or foliage. Such is Mr. Mackelvie's plan—simple, but most efficient. In the following sketch the horizontal dotted line shows the trellis; and the vertical dotted lines the sliding panel.



Under the mode of management stated above, the plants should be inserted at the sides of the frame; thus leaving the whole of the interior free for operating.

E. WEAR GIFFORD.

DOMESTIC MECHANISM.

IMPROVED CHIMNEY-TOP.—In our description of the "room ventilator," we made allusion to the design with which we now present our readers. Where chimneys smoke, by the wind forcing down the smoke in the vent, the top we are now to describe will act as a preventive. Provide a tall cylindrical tube (zinc will be the best material of which to make it) some two-and-a-half feet long, and of diameter equal to the vent on which it is to be placed. A flange two inches wide should be made at the bottom of this; this will give the tube a hold of the wall, when properly fastened and built in. At the top of the tube an angular cover, as shown in the sketch, should be fastened: this will prevent all the winds blowing downwards from entering the tube, yet allow the smoke free passage to the external air. Provide another tube of some two inches-and-a-half greater diameter than the internal tube, and about two-thirds of the length; fix this as in the position in the sketch, by means of radial bars, fastened at one end to the inside tube, and at the other to the outside one;



four of these radial bars, at top and bottom, will suffice.

When the wind blows downwards, it will be deflected down the sides of the cover, and between the two tubes, passing out at the lower apertures. The air between the tubes being heated, it will ascend, and materially assist the upward draught in the chimney tube, as it will pass with considerable velocity in contact with the smoke and heated air from the chimney.

B.

TO CORRESPONDENTS.

*** We request that no one will write to the departmental writers of THE COTTAGE GARDENER. It gives them unjustifiable trouble and expense. All communications should be addressed "To the Editor of The Cottage Gardener, 2, Amen Corner, Paternoster Row, London."

THE PINK, PICOTEE, AND CARNATION (E. L., of Tavistock).—You ask us what are the distinguishing features of these flowers, and if you mean their botanical marks of difference, we should be puzzled to point them out. So little do their botanical characteristics differ, that they are all considered usually as varieties of the Clove Pink (*Dianthus caryophyllus*). Some think that the Red Pinks only are derived from this, but that the Pheasant's-eye Pinks are the offspring of the Feathered Pink (*Dianthus plumarius*). If you merely require what are their points of difference as Florists' Flowers, then we can point out that they are very distinct. The Carnation marks in flakes, or ribbons, of colour, from centre to edge, and through the edge; and the more dense these ribbons, or stripes, or flakes of colour are, and the more distinct the white ground between them, the better, and the more equally divided, as to quantity, they are, the better. As the petals are broader as they approach the outer edge, so also is, or should be, both the colour and the white. They are divided into classes, called *Bizarres* and *Flakes*; the former having two colours of stripe besides the white, the latter only one colour. These Bizarres and Flakes are subdivided—there being purple flakes, rose flakes, and scarlet flakes; and there being among the bizarres, scarlet bizarres, which have scarlet stripes, and a second colour, which is considered better for a rich contrast of black, and approaches to it; then purple bizarres, which have purple stripes, with a light pink, or rose, or some other colour, forming a contrast. The Picotee has the colour only on the edge, and broad, or narrow, as the case may be, but ramifying towards the centre; any mark or spirt of colour that does not touch the edge, is a blemish. Some, therefore, are only marked round the edge very distinctly, but as narrow as possible; others have a sort of feathering, narrow, or deep, as the case may be, but feathering inwards from the edge; the outer edge solid, and the inner edge rough, or feathery. The Pink is distinct from both these. The lacing, as it were, of a Pink is rough outside and inside, with a portion of white outside the lacing, as if a band of colour had been laid on; besides this, there is colour at the base of every petal, and, perhaps, one-third of the distance along the petal, so that it forms an eye, or centre, of colour, which is peculiar to itself, and which never occurs in the Carnation or Picotee. A Pink, without its lacing all round each petal, and its narrow strip of white outside it, would be worthless as a show flower. The more distinct this lacing is, the better; it should look like an even piece of embroidery, just fairly within the outer edge of the white.

NEW-LAID TURF (*Susannah*).—After levelling the lawn, and laying it down with what "appeared to be very nice turf," you find it now "so rank" and so full of Plantain, that friends must need come in to advise you after the fashion of the old man and his ass. Those who "smile" at meritorious efforts ought to be made to laugh on the wrong side of the garden-gate. To take up the turf again, and put in so much sand or ashes, or what not, and then sow grass-seed or put on the old turf again, is a very expensive process, and, after all, would only give a temporary relief. Depend upon it, the best course will be to keep hard at it with the scythe or mowing-machine; particularly very late in the autumn, and very early in the spring, and to get some boys to spud out the broad-leaved Plantain, &c., in April and October. Then, if you could get an aged, steady woman to go after them with a teapot full of dry salt, to pour as much of it into a spud-hole as would salt an egg, you would finish them. We have known a teapot thus clearing a whole lawn of daisies in two successive seasons.

VERBENA LAYERS (S. R.).—You have acted the part of a good gardener, certainly, when you "laid down the shoots of Verbenas to root, then potted them, and after stopping them let them stand out as long as it was safe to do so." Go on and prosper in "your present state of happiness," and you will shew your friends still greater wonders. You seem to us, certainly, to have been moulded out of the true blue clay. But we must have a leaf out of your own book by and by.

BEDDING GERANIUMS (*Charley*).—"Nineteen or twenty of the best bedding geraniums," and all about them, you shall hear of very shortly. What is the name of the *Yellow Calceolaria* which does so well with the Frogmore Geranium, of which we know every leaf?

AWFUL BEDS (S. S.).—You made the beds too rich by far; the crop of plants you have grown, however, will take the strength out of them: dig them only six inches deep next winter, and add nothing to them, and you will be all right another year. For the *Verbenas* add one inch of something rich, as leaf-mould, on the surface to start them, or you may try some of the strong things in pots.

CAMELLIA, AZALEA, AND CITRUS (S. W.).—Take out the Camellia from the stove now. You have saved your Azalea by a dexterous move, but you must not expect many blooms, if any. The drops on the leaves of the *Citrus* might have, indirectly, caused the flower-buds to drop. The plants are growing too strong, and throw off the buds in consequence; but they are young, and you must bear with them awhile, very likely next year they will be covered with fruit; but do not give them much pot

room till you see the fruit all set. We could not have made a better hit with the cuttings in the time.

VARIOUS QUERIES (H. G. B.).—*Agapanthus umbellatus* is propagated by suckers, offsets, or dividing the plant. It is best done either after the plant has flowered, or early in spring before fresh growth commences. Early in autumn is best, as then the detached pieces will sooner flower. **Potting Plants.**—You are right in removing the outside soil as far as practicable; and for many things we should agree with you in putting the ball into a pail of water, and gently agitating it until all the soil was gone, though for most things it is unnecessary when you can give larger pots, and for some things it would be impracticable. In placing plants from a large pot into a small one, such as in the case of plants cut down that you wish to grow on again, the method is capital; but we by no means agree in your proposal to soak the pot after potting afresh in a tank of water, unless in the case of strong-growing large-leaved plants. In most cases the roots already will be so charged with moisture, that little more will be required for a short time, and that had better be given by syringings, to prevent evaporation, than as soakings to the soil. Many previous articles will show the rationale for this. **Passiflora cœrulea.**—Your covering the roots with any dry non-conducting substance will be advisable; a little of your oilcloth wrapped round the stem will also be serviceable, especially if you mean to keep it out-of-doors much north of London in winter. The little trouble will be well rewarded. **Guernsey Lilies.**—We have not tried these in glasses with water like hyacinths. Have any of our correspondents? **Nymphaea alba.**—We would plant these not on the bank, but in the pond, a few feet from the side; if deep, put them in a basket of rich loamy earth, so that the surface is covered about a foot. As the plants get strong, they will reward you with swimming leaves, and flowers not greatly inferior to the *Victoria regia*. **The bulbs of Lilies** done flowering, and the stems and leaves withered, may either be kept in sand, or allowed to remain in the pots, provided they are dry, and free from frost, if tender kinds. They must be potted, or planted, before the roots have grown anything to speak about.

BEDDING GERANIUMS (J. Betsworth).—Of the greenhouse Geraniums we have only yet found two that will flower continuously through the whole season—*Priory Queen* and *Queen of Roses*. Try these two to begin with; and if you have sufficient leisure and inclination to breed cross seedlings between them, we shall have to repeat your own question back again some day, as assuredly you will be in possession of the "best bedding greenhouse Geraniums." As to soil and pots for potting the bedders in, whatever comes nearest to hand will do very well, only have the pots well drained, and not too big.

GERANIUM LEAVES (M. F.).—The leaves sent belong to the Scarlet section of bedding Geraniums, and such are as difficult to distinguish from each other as so many swans. It is in their flowers and habit of growth that they differ so much. We cannot say from a leaf which is the best, and no one can. As soon as you see the roots from the cuttings begin to coil round the pot, is the right time to separate them; and at this late season 3-inch pots will be large enough for them separately.

PROTECTING CUPHEAS (W. R. J.).—They are cut down, and the roots are kept drier by having the layer of brushwood between the soil and the thatch. For bulbs and all plants that must be cut down to the surface this is a superior plan to the usual way of covering.

SCARIFIER (G. W. C., Corstorphine).—Our correspondent says, "The most valuable implement which I have for pulverising the soil, &c., is a three-toed 'clat,' or hoe, in shape like a potato fork, with the neck bent back, and fastened to a long handle. I have shown it to several gardeners and farmers, and one has had his field-potatoes cleaned with it, and he informs me that they never looked better." This scarifying prong is not new, and may be compared to a Vernon hoe with three prongs.

GERANIUM CUTTINGS (Robinson).—Compliance, we regret, is quite impossible.

KOHL RABI (J. Crowson).—You must not touch the leaves until the bulb is the size of a large turnip; you may then, about November, pull up the whole, give the leaves to your stock, and store the bulbs as you would Swedish turnips.

SOOT (Wm. B.).—This is a good manure for almost every kitchen-garden crop, and fruit-tree, provided the soil is not very light, which yours seems to be. We have no doubt that it would be beneficial to currant-trees, as well as to gooseberry, though not more so than to others. Try it to one or two, and the experiment will be the best teacher. Thanks for the returns.

FLOWERS FOR A GRAVE (T.).—You say you have been asked "what would be the most appropriate flowers, or plants, or shrubs, for a father's grave, nearly 70 years of age?" A strange question; and suggesting that that grief is not very deep which holds consultations about appropriate demonstrations. He who writes sonnets, or cultivates flowers over the dead, has assured subjects himself to the suspicion of Phariseism in his grief—he desires that it may be seen how he grieves. We approve of cemeteries, but we detest Pere-La-Chaïsism.

TYING-UP LETTUCES (A Lover of Roses).—This need not be done until the Lettuces are nearly full grown. If you cultivate the Paris White Cos, as we recently suggested, the plants would not require tying; they heart like Cabbages. Do not cut off the strong shoots of *Roses*, merely stop them. What we said last week about *Himalayah Pumpkins*, applies to all kinds.

HELIANTHUS (S. L.).—The Sunflower and the Jerusalem Artichoke belong to this genus, so how can we reply to such a question as, "What kind of plant is the Helianthus?"

DAHLIA LIST (A. B. C.).—We think that which we published last week supplies what you require; for it includes none but "the best."

CORAL PLANT (R. L., Cheshire).—This is the *Erythrina crus-galli*,

and is considered a stove plant; but *The Cottage Gardeners' Dictionary* states correctly that "*E. crus-galli* and *laurifolia* do out of doors, in sheltered places, if cut down, and the roots slightly protected, as for Fuchsias in winter." If you have any seed, sow it in the spring, in a gentle bottom heat, under a bell-glass, in a mixture of peat and sandy loam. There are several species of *Acacia*, with white flowers. If you can send us a cutting of the *Fuchsia*, we should like to try it.

BUDDING'S MOWING MACHINE (Mostyn).—You may very safely purchase this for use upon your extensive lawns and grass plots; especially as you are short of hands.

WATER FOR PLANTS (A Lady Subscriber).—You may use, with perfect safety, the rain-water in the stove reservoir, although dirtied by ducks. They improve its fertilizing quality.

MEAD (M. D.).—You will find Mr. Payne's recipe for making this at p. 338 of our fourth volume (No. 100).

DORKING OR SPANISH FOWLS (Z.).—Our correspondent requires six hens and a cock, of this year's spring broods, of either of the above-named kinds.

GOOSEBERRY PRUNING (A Constant Reader).—We always shorten the annual shoots of our gooseberry bushes about one-third, and can answer for its not injuring their fruitfulness. The *Jephson Fuchsia* does not require different treatment than other Fuchsias. When a plant sheds its buds it is a certain sign that the action of the roots and of the branches are not in harmony. Thanks for the return.

CARNATIONS (A Cottage Gardener).—The two blooms you have sent are rich in colour, but only fit for the borders. Every seed from the same pod produces a plant differing in its flowers from those of all the others.

ORCHARD PLANTING (T. M. N.).—We have no better list of hardy fruits than that given so fully by Mr. Errington at p. 317 of our fifth volume. Plant in November, on stations raised above the level of the ground, and keep mulch over the roots in spring and summer. You must not expect healthy trees if you grow potatoes or other crops among them.

BEES (Elise).—Remove your small hive at once; and feed your bees in the autumn, if the hive does not weigh 18 or 20 lbs. Your *Convolvulus* major and *Canary Plant*, raised in a frame, and which have not thriven since they were planted out, were not hardened off; that is, gradually prepared by freer admission of air for their great change to the open ground.

FAIRY RINGS (K. O. T.).—We have known these entirely removed from a lawn by sowing over them salt thickly. It apparently kills the grass for awhile, but this gradually revives. The Spangled Hamburgs and Spangled Polish Fowls are quite distinct varieties, and you will find them particularly described in Richardson's shilling volume, *The Domestic Fowl*. We shall be glad of the results of your experience in poultry keeping, for facts are always valuable.

FUCHSIAS (J. S.).—"Pearl of England," raised, you say, by a labourer, is a good contrasted-coloured flower, the sepals creamy, and the petals scarlet; but both that and the other two were too much withered to judge of form. Why will not our inquirers pack their flowers in damp moss?

NAMES OF PLANTS (E. F. H.).—By some accident the plant from Sea-view was lost, although it had evidently been in the letter. Send us another specimen. (T. O. P.).—Yours is *Centaurea cyanus*, a common weed in corn fields, or gravelly soils, throughout Europe, but cultivated as a garden annual. (Sally.).—*Calliopsis tinctoria*, a half-hardy annual. (F. W.).—The dull purple velvety rings on the under side of the oak-leaves, near Hastings, are a parasitical fungus, *Erineum griseum*. (Clericus Derbiensis.).—Your flower is, we believe, *Dictamnus fraxinella*, commonly called *Fraxinella*. Dust with quick-lime the *Caterpillars* on your gooseberry and currant trees; put the lime into a coarse linen bag, and apply it early in the morning, while the dew is upon the plants and caterpillars.

LARGE CATERPILLAR (J. Kirkite).—This, as well as we can make out from your description, is the caterpillar of one of the Elephant Hawk Moths. It probably wishes to make its cocoon, and enter into the chrysalis state, to enable it to do which keep it supplied with Lady's Bed Straw (*Galium verum*).

PROFIT FROM ONE-EIGHTH OF AN ACRE (Wm. Thoms).—You are much too fast in your condemnation. It is not said at p. 297, that £17 can be cleared from such a plot anywhere; but we can tell you, that more than that sum has been cleared from a similar plot in the neighbourhood of a large town, and "An Anxious Enquirer" was so situated. By the aid of a hothed or two, and a small greenhouse, to supply the market with a few early things, and to raise window plants; by the aid of pigs and poultry, by which, as you say, "a little may be got," and his bees, which one year nearly paid his rent, the party to which we allude made annually more than seventeen pounds from his garden.

ADVERTISEMENTS (T. M. W.).—We wish we could give four extra pages, and so devote all our present space to gardening matters; but we cannot afford this; however, we are endeavouring to make arrangements for avoiding advertisements on our last page.

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M D	W D	SEPTEMBER 11—17, 1851.	WEATHER NEAR LONDON IN 1850.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bef. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in In.						
11	Th	Bean harvest begins.	30.272 — 30.230	69—37	E.	—	29 a. 5	24 a. 6	7 a. 14	16	3 19	254
12	F	Ivy flowers.	30.250 — 30.219	70—32	E.	—	31	22	7 32	17	3 40	255
13	S	Elder berries ripe.	30.266 — 30.241	68—32	E.	—	33	20	7 50	18	4 1	256
14	SUN	13 SUNDAY AFTER TRINITY.	30.239 — 30.221	59—40	E.	—	34	17	8 11	19	4 22	257
15	M	Vapourer Moth seen.	30.252 — 30.247	65—52	E.	—	36	15	8 35	20	4 43	258
16	Tu	Horse Chestnut brown.	30.284 — 30.251	67—51	E.	—	37	13	9 1	21	5 4	259
17	W	EMBER WEEK. Peewits flock.	30.290 — 30.197	69—39	E.	—	39	10	9 34	22	5 25	260

THE Horticultural Society of London had its origin in 1804, from a few individuals of wealth and talent, who associated for the improvement of the art in which they delighted. Their views soon enlarged, and on the 17th of April, 1809, they were incorporated into the above-named Society. The Charter states the Society to be for the improvement of Horticulture in all its branches, ornamental as well as useful, and the Society has power to purchase lands, &c., and is liable to be sued, and able to sue; to have a common seal; an indefinite number of Fellows, a Council of fifteen Fellows, a President, Treasurer, and Secretary. The first President was the Earl of Dartmouth; Charles Greville, the first Treasurer; and R. A. Salisbury, first Secretary. In 1821 the Society founded a garden at Chiswick, covering thirty-three acres, which they have on a lease renewable for ever, of the Duke of Devonshire. To enrich the garden no pains have been spared, the whole pecuniary power of the Society, and the personal interest of the Fellows having been employed to render it as perfect as possible. In 1821 the Society sent out to Bengal and China, Mr. John Potts, and to the latter country Mr. J. D. Parks, in 1823. Mr. John Forbes, in the last-named year, was sent to the eastern shore of Africa; Mr. D. Douglas to the United States, and in 1824, the same gardener proceeded to Colombia, as did Mr. J. M' Rae to the Sandwich Islands, Mr. Hartweg to California, and Mr. Fortune to China, all for the purpose of collecting new plants. The result of their researches has been most gratifying. Besides these especial collectors, the Society has numerous corresponding members in every quarter of the globe, who, from time to time, have much forwarded the views of the Society.

In 1809 they commenced publishing their *Transactions*, but these were abandoned in 1830, when the Society was found to have been mismanaged, almost to ruin. At present they publish a more moderate-priced quarterly, under the title of *The Journal of the Horticultural Society*, the first number of which appeared in 1846.

The affairs of such a Society are necessarily chiefly under the direction of one officer, usually the Secretary, and if a paid servant of the Society, and without the power to expend its income, except under the control of the council, no better system of management could be devised. We have stated that Mr. Salisbury was the Society's first Secretary, but it was, unfortunately, an honorary office—that worst of all tenures, for the "honorary" confers an obligation on those he serves, and his masters are repugnant to chide for what is neglected, inasmuch as that what is done is a favour, rather than a duty. Mr. Salisbury retired from the office in 1810, being succeeded, but still as Honorary Secretary, by JOSEPH SABINE, Esq., and as the mismanagement by this gentleman offers many useful lessons, we will glance over his career, give praise where it is due, yet not disguise, nor fail to castigate, his errors.

When Mr. Sabine joined the Society, in 1810, its accounts were in great confusion, nor was it in any way rising in the public estimation; a state of affairs which he so energetically and successfully rectified, that the Society, in 1816, marked its sense of his services by the award of its gold medal. There can be no doubt that to his personal exertions were owing the increase, not only of noble, but of royal patronage, which the Society obtained; nor were his services limited to Regent-street and Chiswick, for it is equally certain as that he revived the Society, that he promoted the existence of many local Societies, and aided, by the publication of its *Transactions*, and the distribution of new plants and improved varieties,

to improve the gardening of the British islands. Such success, unfortunately, was the origin of eventual failure; for dashing on in triumph, and in a position of uncontrolled trust, one outstretch of power was but a leading string to another, until at last he became "not only the Secretary, but the President, Council, and even the head gardener of the Society."

Uncontrolled power is ever prone to be corrupted into despotism, and at length not only was every material transaction the result of his order, but even the head gardener had no power to hire or dismiss, to punish or reward his labourers, and scarcely a tree could be moved, or a border dug, without Mr. Sabine's assent! If he had vowed to be the horticultural Cæsar, he could not have more perfectly effectuated his resolve, and then he went one step further, and directed that an under-gardener should attend each party who visited the Chiswick Garden, that that gardener should make notes of their private conversation, whether relative to the garden or otherwise, and that such conversation should be reported to himself, the grand chieftain of the espionage. This un-English spy-system led to the Society's extrication from the ruin to the brink of which it had suffered itself to be blindly led. A conversation in the garden between the late Mr. Bellenden Ker and his wife, was reported to Mr. Sabine, and was so offensive to him, that he actually was rash enough to propose to the Council the expulsion of Mr. Ker. This naturally roused that gentleman to denounce the dictator and his system, and one discovered wrong encouraging to the revelation of others, a committee of enquiry was appointed, and it was then discovered that the Society was becoming hopelessly involved. The expenditure had been most lavish, and instead of the debts being no more than £3,350 as represented by Mr. Sabine, they actually amounted to more than £18,300. Yet there was not a shadow of suspicion on Mr. Sabine's honesty, and all the expenditure had been in increasing the imposing aspect of the Society. The mistake was, that Mr. Sabine did not stop to calculate whether the income of the Society was equal to his determined expenditure; but, with a rashness as fatal to a Society's, as to an individual's prosperity, he resolved on an expenditure, and trusted to hope for increasing the income up to the outlay. Mr. Sabine resigned, not without the accompaniment of a threatened vote of censure, vigorous retrenchment and economy took the place of lavish extravagance, and the Society, it is to be hoped, is gradually extricating itself from its difficulties.

Mr. Sabine was originally educated for the bar, but obtaining the almost sinecure appointment of inspector of Assessed Taxes, he abandoned Westminster Hall for the more congenial Courts of the Linnæan and Horticultural Societies. When his connection with the latter ceased, he devoted his energy, which was great, to the service of the Zoological Society, of whose council he was member, and whose garden was greatly enriched with plants by his exertions. Death came to him whilst thus engaged. He died on the 24th of January, 1837, and deserves our notice not only from his connection with the Horticultural Society, but as the author of many papers which were published in its *Transactions*.

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-four years, the average highest and lowest temperatures of these days are 67.6° and 46.9° respectively. The greatest heat, 84°, occurred on the 17th in 1843, and the lowest cold, 29°, on the 17th in 1840. During the period 96 days were fine, and on 72 rain fell.

JOURNEYING down the old road which still spreads its broad and level face between Bath and the metropolis, and not many miles beyond that town where more than once Cavalier and Roundhead fought fiercely for the rulership of England, a mansion may be seen, flanked by sheltering woods, too far off to be inconvenienced by the inquisitive gaze of the passing traveller, yet near enough for him to conclude that it classes with the homes of "the gentles of England." Nor is the conclusion a hair's breadth from the truth, for there dwell three sisters, in whose veins courses the blood of "Peve-rell of the Peak," and one of whom now tells in our pages, of the "Villagers," in whose welfare they all share an equal interest. Those truthful sketches of peasant life—those best of sermons, with breathing examples for the text, and real consequences to point the moral—work out a large and wide-spread measure of good, and are worthy successors to that series of

"*My Flowers*," which first appeared in our pages, and now published in a small and cheap volume, are lying upon our table. When we look upon that volume, and when we remember, for vanity is a subtle prompter, that we first persuaded our gentle relative that she could write, and that those essays, which coming from the heart go to the heart, first appeared in our pages—we are tempted like the organ bellows-blower to say—"Our music is good."

"My Flowers" in a volume, except by some additions and amplifications, and by being arranged in monthly sections, are the same as when they appeared, some two years since, in all their freshness, beauty, and purity, in our pages. From us they need no other criticism, and we think now as we thought then, that few studies of nature ever surpassed them, and that none but the vicious can read them without delight. Pure in thought, pure in language, and on topics in which all

are interested, it is a volume that must be equally welcome to all classes, and from which all may derive improvement.

Before concluding, we must notice that the same authoress has just published another small volume, entitled *Safety in Peril*; a work, as one of its critics justly says, in which "The faith once" for all "delivered to the saints, is truthfully, clearly, and elegantly set forth."

GARDENING GOSSIP.

THE progress of Floriculture is slow, and we wish we could add sure. It is not that we run short of novelties, but that there are too many of them, and so very few in advance. It is not enough that some new shade in the colour, or some unimportant correction in the shape, is apparent in a seedling to give it a place among expensive new things; it ought to be distinct from all we have in colour, or better than all we have in shape. We wish especially to know which of the present year's *Dahlias* are advances, upon what we had already, in form? Or whether we have not, in every colour, a better flower among our old varieties? What in orange-buff has beaten *Toisson d'Or* and *Duke of Wellington*? What in blacks has passed *Stopford* and *Triumph*? What in lilacs or lilac-rose has beaten *Fearless*? What in scarlets is to beat *Gem*, or in yellows to beat *Standard*? Where are the light flowers to beat *Marchioness Cornwallis*, *Queen of the East*, and *Princess Radzville*? These were questions put at a public meeting; and the summary of the observations, for there were no answers, amounted to this, that there had been nothing to beat the flowers mentioned in their particular way. *The King of the Dahlias*, though attempted to be burked by the trade, was a beat on all the crimsons; that *Barmaid* was a new variety, and a distinct one, and, though not a beat, a decided acquisition; that *Admiral*, though not a beat on *Fearless*, was a beat on the *Duke of Cambridge* and *Queen of Lilacs*, and was an acquisition because it would be shown with *Fearless*. Then there was the white flower, *Gem of the West*, or *Queen of the West*, had come a very decided acquisition. But it was alleged, that although many of the new flowers had come badly, nobody could fairly judge *Dahlias* in August; but it was generally admitted that a great majority of the new flowers were worse than old ones of the same class.

In *Phloxes* there was little room for improvement in form, so that the only chance there for new ones was in colour; *Pansies*, it was admitted, had done but little; *Hollyhocks* had, however, progressed in the great essential, the thickness of petal, and the *Duke of Wellington* was a grand acquisition, not only beating everything of its colour, but in substance beating all others, so that everybody who proposed raising seedlings ought to look to that, though the dealers affected to find many faults. The *Petunia* seemed to be at a stand-still, none had substance and stiffness of petal which alone could give real value to a new one. *Roses* were allowed to have improved; but that there were still very few well-formed with stout, lasting petals. *Camellias* have

been moving the right way, but there are too many new ones without half the merit of the old ones; and when they looked to the great number of new things commended by the National Society, there was more difficulty in choosing from the mass than there was before, so many were prominently thrust forward, more especially as there were some really better things passed without notice. *Geraniums*, notwithstanding so much had been written against further improvement, had advanced very considerably, although we should not derive the benefit of all that had been done until after next year. There was a general opinion expressed in behalf of a system which has often been recommended, namely, that if those who intend to raise seedlings would select half-a-dozen of the best of any flower, no matter which, and seed them by themselves, the produce would be far better than twenty times as many saved from plants in collection; and that as many persons are acting on that system, floriculture would very soon feel the benefit of it in great improvements of the races.

The subject of *The Mealy Bug* on plants was the means of engrossing an hour's discussion at a recent meeting of gardeners; and ugly as this customer is in a plant-house, the gardener naturally tries every remedy than can be suggested; but cleanliness is the only cure. A lazy gardener, who scarcely knows his business, will make it an excuse for neglecting everything. All the remedies mentioned were only different modes of securing cleanliness. All stoves are subject to it; a lazy fellow will let them get a-head, and then it takes half his time to clean his plants again.

It was generally, or rather unanimously, conceded, first, that the gardener who would not go into the foulest house in the kingdom, and in which the whole collection was infested, and clean both houses and plants, was unfit for any good place; secondly, that the best means of cleaning the plants, is with a good shaving brush and hot soap-suds; thirdly, that when plants are very bad they should be sharply pruned, so as to take away all that was too much damaged before the washing commenced, as it materially lessens the labour; syringing with warm water after washing, and then subjecting the plants carefully to heat and moisture, constantly watching for the enemy, and repeating the operation. It was, also, agreed that the house should undergo a complete cleansing with soap and water, and brushing, and hard syringing. Nothing is more common to get the bug with a plant, and a lazy fellow will let it go all over the house and infest every plant in it before he even looks for it, and then, instead of getting rid of it, will attribute all his misfortune to the offending plant.

There is in the last month's number of a contemporary a very instructive lesson, and a very candid acknowledgment with regard to a recent warm discussion on *The Great Northern Tulip Show*. It is acknowledged that time was, when the northerns did patronise foul tulips for the sake of the marking, and, which is still more important, it is also allowed to be wrong, although still adhered to in some places. Now this clears away a good deal of that misunderstanding which led to something very like personalities on the part of our contemporary, certainly not returned by us, nor, as we think, called for by our warmly expressed opinion against one of the judges supposed to represent the south, and whom we blamed for giving a prize to foul flowers. There was

no gall in the case. A principle of flower-judging was involved, a principle which we from the first defended, and which we censured one of the southern judges for abandoning, but gave him credit for more than he deserved; we made too sure of his pure taste, and accorded him the merit of being one in four reluctantly compelled to act against his taste and judgment.

What was there to cause the irritation that has been shown? What was there to justify a personal attack upon the supposed writer? There was nothing new in condemning the northern taste; and, mark this, there was nothing in the decision to show that the northerners had conformed to the southern rules. We have now the evidence of Mr. Wood, of Nottingham, that they have done so generally, although in some parts they still hold out; and all we can say is, we are glad of it; there will be no more bickerings about foul bottoms. It may be considered one great proof of the advancement of floriculture, that an experienced florist of Mr. Wood's standing admits the propriety of a pure base and stamens as the *sine qua non* of tulip showing; but, be it remembered, that one prize given to one foul flower would be a perfect justification of all we said of the show and judgment; and Mr. Wood will recollect it was not to one, two, nor three instances that we alluded. We do not wish to renew this controversy, but we believe it to be a very mistaken notion that floriculture suffers from an occasional spurt of this kind. Mr. Wood's paper might never have appeared, had it not been for our warm condemnation of the judgment that gave a single foul flower a prize; and nobody can read that paper without rejoicing that such a manifesto on the part of the northern growers will confer the greatest possible advantages.

E. Y.

NEW PLANTS.

THEIR PORTRAITS AND BIOGRAPHIES.



TWO-ROWED APONOGETE (*Aponogeton distachyon*).—*Paxton's Flower Garden*, ii., 31.—This hardy aquatic is a

native of marshy places at the Cape of Good Hope, being a well-known water plant in our Botanic Gardens and collections of the curious; for we must regard it more in the light of a botanical curiosity than as a showy plant. It is reported, in many instances, to have stood out our climate in standing waters which were not frozen so deep as the roots were planted; and it is not uncommon to see it, during the summer, flowering with the freedom of a native in such places.

We are now the more anxious to make such plants better known, as a great impulse has lately been given to the interest in water plants, through our success in the cultivation of the queen of the waters, the Victoria Lily. This impulse, we faintly hope, will not lose its moving power until every lake, and pond, and rivulet, in or about our pleasure grounds, are planted with the gorgeous, rare, or curious vegetation from the temperate regions of both hemispheres, which have hitherto been left to the sole care of the naiads or water nymphs of romance. The genus *Aponogeton* derives its name from a compound of the Celtic and Greek — *apon*, water, and *geiton*, near, alluding to their place of growth. The name originated with the great Linnæus, and in his system of botany is referred to his sixth class, and the third order of it, *Hexandria Trigynia*. The name of the Natural Order to which it belongs is *Arrow-grasses* (Juncaginaceæ).

Aponogeton distachyon has narrow, seven-nerved, spear-head leaves; its spike bears its flowers in two rows; stamens twelve. It was first introduced into the Botanic Garden at Edinburgh, and grows, as in its native country, in the south of Devonshire. At the Cape it is called *Water Uintjies*, and its flowering tops are there used as a pickle, and boiled as asparagus.



POINTED-LEAVED HOLBØLLIA (*Holbøllia acuminata*).—*Ibid*, 35.—This is a genus of greenhouse climbers; natives of Nepaul, where their berries are eaten by the natives. Their flowers are not very conspicuous, but they are agreeably fragrant. They belong to a small obscure Natural Order, called *Lardizabalads* (Lardizabalaceæ). This order was separated from the *Menispermads*, in 1837, by M. Decaisne, who wrote an excellent memoir in illustration of it.

These plants are readily known from the *Menispermads*

by their compound leaves, but of the near relationship of the two orders there can be no doubt; since we find Decandolle, in his great *Prodromus*, arranging them so closely as two sections of the same order; but Decaisne's views of their affinity are now allowed, by the common consent of botanists, to be more correct. Dr. Wallich named the genus to commemorate the name and services of Frederick Holböll, Superintendent of the Royal Botanic Garden at Copenhagen. They are Monœcious plants, or, like the Cucumber, having the male organs in one flower, and the female in a separate flower, but both on the same plant. Such plants are referred in the system of Linnæus to his twenty-first class, *Monœcia*.

Holböllia acuminata has leathery, narrow, spear-head, pointed leaflets, three or five on a common footstalk; the flowers are white streaked with purple, and orange-scented. It is probably hardy, and its foliage nearly evergreen.

B. J.

THE FRUIT-GARDEN.

RENOVATING WEAK OR WEARING-OUT TREES.—In the course of our duties, we must not only attend to fruit-trees in the very hey-day of prosperity, but those of a less fortunate character. The gardener's vocation somewhat resembles the physician's in this respect; he is called upon to control the exuberant, to assist the weak, and to renew, as far as possible, the shattered constitution; and to carry the parallel still farther, to perform surgical operations where necessary.

Very many fruit-trees, especially in the ordinary orchard, perish, or fall into a state of premature vegetable decrepitude for want of a little assistance rendered in time. The renewal of the vigour of trees thus situated has been pointed to in former papers, but such have been principally confined to branch-pruning. We will now proceed to show that much may be done at the root; and, in our opinion, the end of September is the most eligible time for the operation. Matters of this kind constitute a sort of extra in gardening affairs; no man of any standing in our profession will leave any of these extras until spring if he can possibly avoid it. Spring, in these days, comes laden with a burden peculiarly its own; a burden which it is scarcely capable of sustaining. Spring will do well, then, to borrow a few hours from sober-faced and lightly-laden autumn. Borrow, did we say? it must be stolen—shame to say so; it will never be repaid.

Not only is this good with regard to the case in hand, as an expedient, but, in our opinion, the practice is right in principle. If *early autumn*-planting is right in the majority of cases; if the putting out cuttings of many deciduous trees is right; why then this is right, and for the very same reasons. The process is thus ably set forth in that clever work—*The Theory of Horticulture*. "As soon as a plant has shed its leaves, it is as much at rest for the season as it will be at any subsequent period; indeed, it is greater at that time, because its excitability is completely exhausted by the season of growth; and it has had no time to recover it. If at that time a root is wounded, a process of granulation or cicatrization will commence, just as it does in cuttings, and from that granulation, which is a mere development of the horizontal cellular system, roots will eventually proceed." Here, then, are arguments of a scientific character, backed by the phenomena of every-day occurrence. So then, it will be seen, that a granular process takes place in cuttings, technically termed *a callus*, and this callus is the producer of fibres. This will serve to throw light on the process which occurs when roots are cut, as in the act of transplanting or root-pruning. Such injuries, then, if they must be inflicted, had best be perpetuated early in the autumn, inasmuch as the trees have a longer period to recruit in; and if the process take place in the end of September, granulations,

if not actual fibres, will be produced by the coming spring: nature is latently making efforts, slowly, but surely, to repair these damages.

We have before observed, in these pages, and we beg to repeat the observation, that injuries arising from late spring-planting, as to fruit-trees, are very frequently productive of serious aggressions on the part of the insect tribes. Amongst these, the red spider and the aphides hold a conspicuous, and, in the practical's eyes, a most unenvied position. The scale family, too, or those bearing the generic title, *Coccus*, frequently "rush to the rapine." Having thus paved the way to a recommendation of an early procedure in these matters, we will proceed to examine cases.

Many trees are to be met with, in all quarters, failing betimes, and evidently not through *age alone*, neither through what is termed Canker. For although the extreme points of many fruit-trees are apt to shrivel and die away, especially ordinary orchard trees, yet, on examination, it will be found that such is not, in general, the disease termed canker. Since ordinary orchard trees, then, are more liable to be thus conditioned than those on prepared soils in our kitchen-gardens, how is it? Why, because the majority of our orchard trees have free liberty to range in ungenial subsoils. From the subsoil, in the main—whether as being too retentive of chilling moisture, or from the presence of deleterious matter—proceeds most of the evils we have pointed to; and such suggested to us, some years since, the general adoption of artificial substrata, and the planting on higher levels.

The wearing-out, or weak trees alluded to, after their lower roots become paralysed or lost, are driven to seek sustenance by means of the surface fibres alone; and as all that portion next the tree has been long robbed of its fertility, the very exterior points alone are the only active agents; and it is principally to these that we apply renovating materials. Where it is intended to carry out this renovating process, a heap of compost must, of course, be provided. A good sound loamy turf is the principal thing to obtain; and those who cannot obtain it should get some turfy material of some kind, as part of the compost. One portion of this, one of old manure, and a third of half-rotten litter of any kind, leaves, &c., well-chopped and mixed, will make a good compost. If plenty of a good, sound garden soil of a rich character be at hand, the mass may receive nearly a half of it.

In commencing operations with a tree thus situated—say an orchard apple-tree, with a trunk six or eight inches diameter, and a head corresponding—let the operator draw a circle around it, with a trammel, about seven feet from the bole; this constitutes, in the main, the boundary line inwards of his operations, and serves to keep the spade from unwarrantable liberties. The operator may now proceed to dig a trench two spades in width all round the tree; and in the course of his work he must take especial notice where the principal horizontal roots are, and where there is a comparative absence of them; in the former case politely giving way, notwithstanding his circle, and in the latter, advancing towards the bole of the tree.

After excavating this one spit deep all round, he must proceed to take a second spit, or enough to gain quite half-a-yard in depth; and if this second spit is an inferior material, it must be wheeled on one side by itself. This done, as before, the operator will now know on which side of the tree the least roots are, and at that position he must bore for the tap-roots, that is to say, he must dig under the tree, and endeavour, without disturbing it too much, to cut all deep-descending and ill-looking roots away, filling the hole beneath full of weeds, or any refuse stuff from the rubbish yard. This will induce some fresh fibres in due time, for there need be no further

fear of tap-roots. And now he may go round and fill in his trench, cramming lumps of turf and manure into every crevice within the circle, and where, through the absence of roots, the spade has made extra advances. If the compost is tolerably dry, which it ought to be, he may tread it slightly as he proceeds.

The whole being filled in, and, we ought to have said, the wounded roots all cut with a sharp knife, the surface of the interior of the circle may be eased of all the loose soil thereon, and a coating of the same dressing applied—equal in bulk to that removed—and, finally, four inches of good *half*-rotten manure cased all over the surface; and, thenceforth, no footsteps should be permitted until the whole has settled.

In the middle of November we would put the trees under a course of pruning, using the knife rather severely, especially in thinning out. All decaying stumps of course must be removed, and the whole of the tree scraped and cleaned thoroughly, extirpating both moss and insects. Whilst this is being done, boards should be laid beneath to tread on; for if the mulching is “puddled,” the previous operation will be nullified. However, if frosty, there will be no occasion for it. As soon as pruned, the whole may receive a thorough soaking with dunghill water. Trees thus treated will, in the majority of cases, recover much of the freshness of youth within a couple of years.

R. ERRINGTON.

THE FLOWER-GARDEN.

ABOUT the time that I was invited to become a writer in *THE COTTAGE GARDENER*, I had almost made up my mind to write a book on my own account, and to call it *The Confessions of an Old Gardener*. In this book I intended to relate all the accidents, the mishaps, and the disappointments, I had either experienced myself, in the affairs of the garden, or had known to have happened to other gardeners who started on equal footings with me; and to trace, as far as I could, the causes which led to such failures; so that the book would be a kind of lighthouse to the next race of adventurers. To get this lighthouse afloat, I knew it would be necessary to thatch it with anecdotes, about gardeners and their patrons, so thick as to resist all weathers; or, rather, to make the sides of the reader ache with laughing, or to make his hair stand on end, or “both by turns.” But *THE COTTAGE GARDENER* came just in time to spare me the labour, and my book from the butter shop. On all fitting occasions, however, I have, in these pages, told of as many of my failures as it was safe for me to do without altogether damaging my own character, and here is another addition to the list. I have failed most completely in doing any good with the bed of *Fuchsia corolina*, my next best favourite after the *gracilis*, and I give it up after trying every mode that I could think of; but I quite agree with “Devonian” about growing it against a wall, and also as standards with five feet of clear stem, and a head like a standard rose as big as the stem could carry. A hundred such standards in a row, at the back of a flower-border, not less than eight or ten feet, would look splendid in the extreme. An avenue of them along a straight walk would be worth walking ten miles to see; the only other plant that I can now think of, if used in the same way, that could give so striking an effect, is the *Humea elegans*. People who are easily struck and pleased with a violent contrast, might wish the *Humeas* and the standard *Fuchsias* to be planted alternately; but I would prefer two kinds of *Fuchsias* in the same way, and my second plant would be the *Fuchsia Ricartonii*, which is exactly the same coloured flower as the other, but the shape of the flowers and the style of growth would be as great a contrast as any other two *Fuchsias* could pos-

sibly produce; and of all the family they are the easiest to make standards of.

My next failure was with a beautiful climber, called *Tecoma jasminoides*, better known as a *Bignonia*. I have in vain striven to get this beautiful plant to flower very freely in-doors; but out against a wall, which is protected from the frost, it is a most beautiful thing, flowering as freely as can be from June to October, and it catches everybody's eye who comes near it. The mode of treatment is the same as that prescribed by Mr. Errington for a vigorous pear-tree. Main shoots are allowed to extend wherever there is room for them, and the side branches from these are stopped at a few joints, to form clusters of spurs, and on the *young wood* from these spurs the flowers come in long succession. Whenever the current growth refuses to give flowers, it is a sure sign the plant is getting too strong, and a few roots are cut to bring about a balance between them and the branches.

Talking of *conservatory walls* brings to my recollection a new idea that has been floating before my eyes for the last four or five years; and, by a few simple experiments, I think I have brought down the idea into practical working order. Conservatory walls are very aristocratic things, very expensive in the first going off, but once finished and set a-going, the expense is not nearly so much as one would suppose. Now my plan is to have a conservatory wall for everybody who has a garden, and everybody to build his own conservatory wall, plant it, and look after it himself, with the assistance of this *COTTAGE GARDENER*, and I shall stake my head on the issue, and not only that, but if I do not succeed in rendering this new wall ten times more gay than all the big walls in England, I shall never put another pen on paper. This new wall need not be a wall at all, but we shall call it so for the look of the thing. The height of it will be seven feet, and a four feet wide border in front of it for the things to grow in. The whole will front the mid-day sun, and will be planted with nothing else but geraniums, and these only of such kinds as will flower on from early in May to Christmas, or rather say, to Michaelmas to begin with. The whole length of the wall will be divided into spaces of six feet each, which will be effected by pillars projecting three or four inches from the line of the wall; and why might not these pillars be posts of oak or larch, and the intervening spaces be of boards, nailed to the back of the posts, and the back of all be banked up, first with turf, and then a slope of any angle made up with earth? in short, make a fernery of it, or a rock-work, or, may be, a green sloping bank.

Now there are thousands of gardens where all this might be made at less cost than even this rough sketch would intimate. Fix on a sloping piece of ground facing the south, and cut it down perpendicularly, as if for a ha-ha fence; three feet or so will be deep enough, the earth that must be removed may be thrown up on the top of the cut, and so get the height by that means. I have seen miles of these sort of banks made in Scotland to build dry stone walls against, that is, stones without mortar, for securing young plantations, and for other kinds of fences. When the mason gets up with his work to the level of the top of the bank, another man comes after him, and lays a turf on the top of the wall with the grass side downwards, and then another turf on the top of that with the grass side upwards; the loose earth from behind is then sloped up to be level with the grass coping, and after that grass seeds are sown over all the naked earth, and in a few months the whole is green, and these walls last out a lifetime. Posts and boards, however, with a good coping, will last long enough for all that I want, and may be put together as for the back of a “cold pit.” Slabs of slate, a quarter-of-an-inch thick and six feet long, would last for ever, but let us say

will last out your lease of the ground, and be as good as ever to remove to your new holding when you remove to another part of the country; the slates might be fastened to posts or pillars of iron, by getting the ends to meet behind the support, and then merely pushing the soil up against them from behind. I put stress on a bank of earth behind the slate, &c., on account of the protection it gives in winter at little or no cost. I know that slate walls, such as these, are now in use for training fruit trees on both sides of them, wires being stretched from post to post, and quite close to the slate, for tying the branches to, and this would need to be done for the geraniums as well; but, after all, a neat board fence would be the handiest to nail the shoots to in the usual way.

Then comes the making of a good border for the geraniums to grow in, and no one is more up to the mark for this part of the work than Mr. Appleby himself, for I quite agree with him about pure turfy loam as being the very essence of what they like best; a good, very good drainage is essential to the scheme, and I think twenty inches deep would be quite enough, perhaps a few inches less would suffice; I said four feet for the width. Let us now suppose that all this is finished, and that the wall is covered from one end to the other with geraniums in full bloom, and arranged upon some particular system as to the colours of the flowers. The best arrangement that occurs to me at present is this: to have the exact centre division of the wall covered with the *Unique Geranium*, the very one which first suggested all this. There is a variety of it called *The Queen of Portugal*, which is much the stronger grower; but the true *Unique* is strong enough to cover a space up to seven feet, if three plants of it are put into one division of six feet wide, which would be the best plan with the whole lot of them; but every one of the divisions ought certainly to be given up to one kind of geranium, otherwise we shall make a mess of it. On each side of the *Unique* division put in the next nearest shade of purplish flower, and follow on to each end of the wall in as regular a gradation of tints as the family will give, and the last one at each end should be a pure white one. But any other arrangement of the colours will do, provided always that no two colours are in one division. The height of seven feet is not absolute; but it should not be much higher, because many of our finer sorts of geraniums will not get higher for a long time, and some of them never; anything from five to seven feet I should think more proper. If any very slow or weak growing kind were to be planted, next to one of an opposite tendency, it might be wise to make a division across the depth of the border to keep the stronger from robbing the other, as the Hambros and Tokays do the Frontignacs in a vine-border. The border itself must be left to the best of the fancy sorts, and to such as the variegated Oak-leaf, the Dandy, and the Golden Chain, and they would not rob much from the trainers. All these dwarf plants on the border I would plant at good wide distances apart—some eighteen inches, some two feet, and some a yard apart, and in the centres between them I would plant all the kinds of *Ixias* (in Jersey, the *Zephyranthes*), and, indeed, as many of the less strong bulbs from all the temperate regions of the world; and outside of all, next the walk—for we must have a walk in front of such an enchanting scene as this—I would have a thick hedge of that lovely little bulb the *Anomatheca cruenta*; and what a beautiful fringe it would make from May to October, in flower all that time, and ripening seeds the while. After the Crystal Palace is stripped, there is nothing else to be had or seen which would at all come up to this arrangement; but how it and the Crystal Palace are to be kept warm enough we have yet to learn.

D. BEATON.

GREENHOUSE AND WINDOW GARDENING.

GERANIUMS.—I often find myself in a dilemma with some of my window gardening friends. Convinced of the importance of cultivating plants in windows, not only as a medium for conveying refined pleasure, but as an influence for bettering and elevating our moral sensibilities, I have frequently tried to meet a great many real, and provide a few imaginary cases, and yet I get frequently reminded that what I have said is, no doubt, applicable to many others, but it does not meet that or this individual circumstance. For instance, here is a friend who tells me that I have said much about what may be done in a window where there is a pit, a box, or any other come-at-able convenience covered with glass, glazed calico, or wooden boarding, moveable at pleasure; “but, that is all of little use to me, for I have got *nothing* but my window. I have no space on which to fix box, pit, or any other concern of an *omnium gatherum* character. All the *terra firma*, in its natural condition, I can call my own, is enclosed in the boxes and pots, inside and outside of the window-sill. Geraniums, or, as you choose to call them, Pelargoniums, are my especial delight, and I read with something like *horror* your incessant talking about cutting them down. To be sure, mine are getting rather spare in leaves and flowers, and somewhat *leggy*-stemmed into the bargain; but, as the peasant will tell you that ‘half-a-loaf is better than no loaf,’ so say I, that a few flowers are better than none; and then the sight of the poor plants, docked, snubbed, and snagged, before they break again, is enough to put an enthusiast, like me, into the *hyps*, to say nothing of the *blues* and the *yellows*.” Now, what is to be done in such a case as this? Hint about getting a fresh young stock, and that plants are so cheap, and you will be stopped with the assurance—“*expense, indeed! who cares for expense*”; but shall we realize the same associations with the *new*, as we have revelled in in company of the old plants?” Fortunate we may reckon ourselves, if we can get our friends to submit to present inconvenience from the cutting down of the plants now, in the hope of enjoying stubby growth and green foliage during the winter, and abundance of bloom early in the following season. Looking, then, in such circumstances, upon present sacrifice as indispensable, I shall shortly glance at some of the means for *lessening*, if not *precluding* such a disappointment in future.

First, then, harden off your most exhausted plants before cutting them down, by placing them outside the window, exposed to sun and air, and giving no more water than will just be necessary to keep them from flagging greatly in the middle of the day. You will have observed that this has previously been recommended for *concentrating* the peculiar juices of the plant, and getting rid, by evaporation, of the more watery juices; in fact, doing what is technically termed *ripening the wood*. Your plants must not remain there long, as the season is fast advancing. According to the present firmness or sponginess of the shoots, and the bright sunshine, or dull weather, you may allow them to receive this treatment from seven to fourteen days. Then,

Secondly, the plants should be cut down, shortening the shoots just beyond one, two, three, or more joints from the base of the shoot, the first or second length being best for windows, as ensuring small plants and shoots well home. After being cut down, the pots may remain outside, and still for some days without water, until the buds begin to break, when moisture may very moderately be given, with frequent *sprinklings* over the *stem*, just to moisten them. A day or two, however, will be enough for the plants to stand *outside* the window; they will get on better *within*, with a muslin curtain between them and the glass on very

sunny days. When the young shoots are about half-an-inch in length, the plants should be re-shifted, divesting the roots of most of the soil, shortening the very weak and straggling roots a little, and placing them in a clean pot, either of the same size, or, better still, a size smaller than the old pot, and in nice mellow, light, rich soil, watered and placed again inside the window, and the curtain brought into operation again on very sunny days, until root-action has proceeded so far as to enable the plant to stand full exposure to sun and air. If you put the plant in a smaller pot, and have no pit, it will be advisable to refrain giving more pot-room until March or April. Now, by merely stopping the points of a young plant raised this summer, you would have a nice-looking plant all the winter, at less trouble than you would experience from all this ripening, cutting down, and repeated re-pottings, and, very likely, better foliage all the season too; but the quantity and quality of the flowers produced by the young and the old plant, would bear no comparison, it being a universal law, that the extreme of luxuriance and the extreme of productiveness are produced by causes the opposite to each other. But what has all this to do with preventing the annoyance of having the window filled with snagged plants? Just this: your cutting down must not be done at any regular season, but one plant at a time, choosing the most exhausted in flowering first, and then making a cutting or two from every plant thus cut down, keeping them in small space, as respects soil and pots, until, when a large plant is thus lessened, room can be given to one or more smaller ones to supply its place. By following up this plan, there will always be growing and interesting plants in the window, and the only regret will be, that every season you will be under the necessity of parting with some for want of winter room; but this, if you have neighbours, may be easily exchanged from regret into a pleasing satisfaction. During autumn and winter, a few inches space between the larger plants will contain young struck cuttings sufficient to fill as many feet in summer. And here, again, the drying or ripening of the shoots before cutting down at once will be apparent, as such cuttings will bear an amount of hard treatment, that more spongy, soft, better, and more vigorous-looking ones would at once sink under. I once, like many of our inexperienced friends, held a different opinion. Everything is simple when known,—not before. The following fact convinced me,—any one may test it by practice:—A great many years ago, just when potting in geranium cuttings, a packet of fine ones (cuttings, I mean) was sent to my employer, wrapped in brown paper. Dire was my dismay in unwrapping them,—the shoots were like heart of oak, but slightly shrivelled, and the leaves would have made snuff if rubbed between the hands, only they were not tobacco. Well, these cuttings not only struck with a tithe of the trouble of my own favourites, but, do what I could to help my own cuttings on, the others made incomparably the finest plants during the season. The above is the best treatment I can think of for the established florist's favourite pelargoniums, which generally bloom freely only for a month or two. But

Thirdly. A few of these of the older kinds will keep throwing up a succession of bloom nearly all the season, if the points of the shoots are now and then picked out before the bloom buds, the leaves kept well-washed, the decaying flowers and leaves removed, and the roots well-supplied with weak manure water. The old *Admiral Napier*, *Alexandrina Victoria*, and *Alba multiflora*, may be taken as a type of this class. These I have seen in 48-pots, in admirable condition, in London, from the end of May to the end of October; and it would be difficult to say when they were fullest of bloom; but they were attended to. The last-named used to sell by the thousand in Covent Garden. Then, again,

Fourthly. There is a group of long-jointed geraniums which continue to produce masses of flower-heads as they continue to grow. There is nothing taking in the habit of the plants, which is clumsy and straggling, but the flowers are generally produced continuously, so long as there is heat given for their due expansion. So far as I recollect, the old *Daveyanum* may be considered a type of this group; and so may the old *Jenkinsonii*, with its scarlet flowers, which blooms continually, either in pot, bed or basket; and who would not at once think of the beautiful crimson, *Rollison's Unique*, that will carry several fine heads of bloom in a 4-inch pot, with double the quantity opening and showing, flower-buds ever appearing as growth is proceeding.

Fifthly. I may instance a half-fancy group with *Diadematum*, and *Diadematum rubescens*, and the beautiful light rose, *Sidonias*, included among them. The latter, even in a bed, producing fresh flower-buds for every half-inch of growth, whether in a lateral or an upright direction, and, unlike *Unique* and its allies, maintaining a compact, firm, dwarf habit of growth.

Sixthly. FANCY GERANIUMS.—The greater portion of these, from blooming so freely, will be rendered almost continuous bloomers in windows, if they obtain the privilege of almost continuous pruning, removing first the decaying flowers, and then the flower-stems down close to the stem from which they issue as soon as they become exhausted,—and giving rich waterings. Even in their case, a few young plants will be useful, and success will depend upon the treatment given, and the removing of every part of exhausted extraneous matter. Under roughish treatment, even these plants will bloom more than double the time in windows that the finest florists' varieties will do; and in almost the whole of them, old and new, the habit is compact and the foliage small—smallest of course in the oldest plants. The beautiful, scented, small-leaved kinds—such as *Citriodora*, and *Prince of Orange*—will continue to yield their flowers and their perfume, and the soil for this group should be lighter than for the others. I have not had great experience in trying to prolong the bloom of fancy kinds in pots, and especially of the newer kinds, but from the success with some in boxes and beds of small size, I could recommend *Yatemanianum grandiflorum* and *Statuiski* as dark ones, and *Queen Victoria* and *Bride of Abydos* as light ones, for our inexperienced friends to commence with in their windows. The general management has been given in several papers.

Lastly, for continuous blooming, the scarlets are invaluable. Those from the *Frogmore* breed are the best for this purpose, the leaves being small, and the trusses of bloom comparatively large—such as *Ingramii*, *Improved Frogmore*, the *Old Frogmore*, and *Tom Thumb*. The latter is a fine fellow in a pot, and to have him in bloom all the summer requires merely the picking out the point before a bud, now and then, and giving him plenty of water. A little rich top-dressing will often be of less trouble than keeping a barrel of manure water. He finds no fault either with guano or superphosphate of lime, but you must not drug him; one ounce of good guano is sufficient for two gallons of water. *Judy* is also a very free-flowering variety, with pinkish-red instead of scarlet flowers—very pretty, though the individual trusses are not large. This and *Punch* are great pets, and deservedly so; I cannot speak so highly of *Punch* for a window plant as of *Tom Thumb*, as he grows stronger, and does not in a pot bloom so continuously, even though you may contrive to hunger him in his feeding propensities. But if you can afford to give him the best part of a window to himself, and want to astonish yourself and delight your friends with some magnificent trusses of the most beautiful scarlet, then by all means have a nice little plant as soon as you can. I will not tantalize, alarm, or render you incredulous,

by mentioning the circumference of a truss, and the number of flowers it contained, any more than I should like to mention the dozens of scores of bloom I counted upon a flower-stalk of the *Kentish Hero* Calceolaria: I had much rather let you grow, and count, and admire for yourself. The *Punch* is very well in a bed; but to see a glorious truss he must have a pot, and the protection of glass. For all this group, where dwarf growth and free flowering for windows are concerned, two things are essential: stunted nourishment, when enough of growth has been obtained, until the flower-buds appear, and then, as rich feeding as the plant will stand. Mr. Beaton has detailed the superiority of old plants for flowering upon the "Harry More system;" and, were I ever so willing, I could add nothing more.

I have only got over a fraction of what I intended; among other things, a few words on potting, as suggested by a correspondent last week: that must wait. Meanwhile, as *Calceolarias* have been mentioned, allow me to say that this, and a fortnight to come, is the best time, until next spring, for striking all the shrubby kinds;—stiff side-shoots, from two to three inches in length, are the things. The best of all places is under hand-lights in a north border; the next in a frame or pit, a sufficient distance from the glass to render shading next to unnecessary; bottom-heat not wanted; failing these, in sandy soil, round the sides of a pot, inside the window, covered with a bell-glass, if you have got it, if not, in a small pot inside of a large one, and covered with a square of glass, exposed in the window, unless in bright sunshine, when you may either cover the glass or set the pot on the floor. Failing glasses of all kinds, a paper cap, made to fit the pot, and, unlike our head-acher night-caps, used only during the day, will answer; but you must give more attention and have more patience. Even those placed on the border, under hand-lights, will have their time; but they will repay you for waiting.

R. FISH.

HOTHOUSE DEPARTMENT.

EXOTIC ORCHIDACEÆ.

ORCHIDS THAT THRIVE WELL IN POTS—(Continued from page 321).

PROMENÆA GRAMINEA (Grass-leaved P.); Demerara.—Sepals and petals pale yellow; lip the same colour, with a deep stain of purple near the base. A small growing plant occupying but little room, and, therefore, may be grown in the smallest collection. Very neat and pretty when in bloom. 21s.

P. LENTIGINOSA (Speckled P.); Brazil.—Sepals and petals sulphur-coloured; lip darker yellow. The flower is evenly and beautifully speckled with rich reddish purple. Neat and pretty. 21s.

P. ROLLISONII (Mr. Rollison's); Brazil.—Sepals and petals light yellow; lip white. The whole are richly spotted with pink and dark red. Very like *P. stapelioides*, only not quite so darkly spotted. Most likely it is a native hybrid. Very desirable. 21s.

P. STAPELIOIDES (Stapelia-like P.); Brazil.—The ground-colour of the whole flower is greenish, beautifully stained, spotted, and streaked with rich purple. This is the prettiest of the whole genus, and worthy of cultivation in every collection. 21s.

P. XANTHINA (Yellow P.); Organ Mountains.—The flowers are of a bright yellow colour, and are larger than any other species of this pretty genus. The lip is spotted slightly with purple. This is also a strong and robust plant. 15s.

Culture.—As the whole of this interesting genus of orchids is composed of small plants, they require, consequently, small pots. They thrive well in very turfy peat. This should be prepared purposely for them and

such-like small plants. Let it become moderately dry, and then lay a turf upon a block and chop it with a sharp hatchet or bill-hook into squares about two inches in diameter, and then pull these squares or lumps to pieces with the hand, giving them a stroke upon the block to loosen the fine soil. When a sufficient quantity has been chopped and broken, put the heap through a sieve, with a quarter-of-an-inch mesh, or even less, the object being only to free the turf from the finer particles loosened by chopping, pulling, and beating. When this is done, the part to be used for potting these small plants in will be thoroughly porous, and will keep so for a considerable period, and so allow the superfluous water to pass quickly away from the plants; add some small pieces of charcoal, and mix them with the turfy peat. Charcoal is a useful adjunct in all mixtures for orchids, but it should not be used in too large pieces, for in the first place they are then clumsy and awkward to place in the pots; and secondly, these large pieces retain too much moisture when the plants are not in a growing state. On the other hand, the dust of charcoal is not desirable for these plants, because it chokes up the drainage, and the roots of the plants perish in it whenever they come in contact. The right way, then, to prepare charcoal, is to break it into moderate sized pieces, varying from a quarter-of-an-inch to an inch in diameter, for small plants, and for larger plants to not more than one-and-a-half inch. Sift it when broken with a very fine meshed sieve, to take out the dust, which will be excellent stuff for the kitchen-garden.

Potting.—The right time for this important operation is when the plants begin to grow. If the seasons of growth and rest have been rightly managed, this will take place in the spring of the year. As soon as growth is perceived, have the compost prepared, and the plants brought to the potting-bench. (This bench should be in a warm shed, or the orchids would suffer from the great change of temperature, even for the short time taken up whilst potting, especially if the young shoots are at all advanced.) Turn out of the pots the ball of the old compost, catching the plant in the left hand. Then carefully remove all the peat from it, and cleanse it from insects, dead leaves, dead pseudo-bulbs, and sponge the plant carefully all over, both leaves and bulbs. Great care being, meanwhile, taken of the roots, for the young points are exceedingly brittle, and as tender as the top of an asparagus shoot. The plant being ready, lay it on one side till the pot is prepared also. Fill it half full of drainage, and lay over that a thin layer of moss, then fill the pot up to the brim with the compost, pressing it down rather firmly. If the plant has many living roots, now is the time to place it on the compost, working it in amongst them so as to gradually raise the body of the plant considerably above the sides of the pot. We once saw a plant of this genus managed somewhat differently; the turf was cut exactly the size of the pot, and, resting upon the edge, was so thick, as to be three inches above it, on this raised mound the plant was placed, and grew so well that it completely covered the turf, and partly hung down the side. Either way will answer well; the great point to aim at being to keep the plant elevated so as to get rid quickly of the superfluous water, when this is applied. Fasten the plant to the turf with hooked pegs, and, the potting being finished, replace the plants in the orchid-house, giving a good watering to settle the compost.

Water.—During growth this must be applied pretty liberally, and as soon as the new bulbs are fully grown gradually lessen the quantity, and when at rest give no more than is absolutely necessary to prevent the bulbs and leaves from shrinking and shrivelling.

As these plants are from the Brazils, they require a rather warmer atmosphere than the Mexican house. The cooler end of the Indian house will be more congenial

to them. Give the necessary quantity of atmospheric moisture to the air during the season of growth, but when at rest keep them drier, both at the root and in the air, and reduce the temperature also at least 10 degrees.

T. APPLEBY.

FLORISTS' FLOWERS.

MR. GLENNY ON FLORISTS' FLOWERS.

TWO FUCHSIAS, two blooms of each; nothing novel nor striking, though like hundreds of others, very pretty.

MIMULUS (*P. R.*).—A wrong time of the year to say much about these subjects, but as blooming at present the whole are worthless; the indentations are far too conspicuous, though they may be different next spring. The only ones worth trying are 20 and 17. These, having nearly a white ground, are worth the experiment.

DAHLIAS (*J. Nash*).—Pretty, but not good; all the petals are too long, a fault much too prevalent among the new ones of 1851. (*M. M.*).—Scarlet seedling quills too much; it might be made tolerably fair by dressing, but gentlemen will not fool away their time in such undignified employment. Give us the flower that may be grown without covering, and shown without dressing. (*A. R.*).—A bad white, in fact a pink, if grown in the open air—of that we are quite certain; *Queen of the East* is worth a dozen of it for form. (*C. C.*).—7 not so good as *Sir Frederick Bathurst*, and precisely the same colour; 5 and 9, fancies, no use. See the fine models we are acquiring now, long guttery petals are not tolerated even for new colours, unless they are also good colours. *Mr. Tanfield*, white, at present a yellowish or crimson white, inclined to notch at the edge, but as some petals are without it, cooler nights may make a difference. There is plenty of stuff, and it seems as if it would bear growing.

PICOTEE (*T. H.*).—We presume a lateral bloom, very pretty edge, but, as compared with some of our present varieties, poor; the guard leaves are narrow, by comparison, and very much too small, in the present instance, to become popular.

PHLOX (*X. X.*).—Nothing new. (*X. Y.*).—Too much indented. A Phlox must be as round as a shilling to be tolerated now, and the truss must be well formed. In this the centre is not bloomed, and the outside ones dying off; that will never do.

A DAHLIA from Wolverhampton was so completely destroyed as to leave no trace by which it could be recognised. Strange does it appear to us that all we have said about packing flowers seems to have been useless. Every body who sends a bloom must bear in mind—*first*, that it is thrown about in the Post-office; *next*, that it is jumped upon when they want to ram the bags into the boots of the mails, or the confined space of the mail carts; and *thirdly*, that the office stamp is pressed upon it with a great weight. A Dahlia, therefore, with nothing to support its heavy head but its own stalk, is nearly certain to be broken off; far better will it be to pack it in dry moss, soft and loose, than to trust the unsupported head to the strength of the stem; but the following is the best way to send blooms merely for opinion: make a box with a loose extra bottom, bore holes with an augur as large as the little finger, and take off the sharp edges; put the stems through these holes, and fasten them flat to the other side; now put two inches of wet moss at the bottom of the box, put the board full of Dahlias in with the stems next the moss, press the board on the moss, and fasten it there by driving nails into the inside, or nailing two pieces of wood, or by buttons inside. Some who take great pains may have an inner rim for the false bottom to rest on. It will be easily seen that the wet moss will hold for days, and that as the flower has the upper part of the box to itself, where nothing can hurt it, and a damp

moisture to sustain it, the bloom must come good enough to judge from. We have received blooms from four to five hundred miles safe by this means.

FLORISTS' FLOWERS CULTURE.

THE TULIP.

THIS is a good time for preparing the Tulip-bed, and, therefore, we will direct the attention of our readers to the details of that operation this week. We will suppose our reader entirely ignorant of the ways and means of making a good Tulip-bed, and the other points of culture necessary to be known to the new beginner; we will, therefore, proceed with first, or elementary principles, dividing our subject into, 1st, situation; 2nd, draining; 3rd, manure and soil; 4th, planting; 5th, shelters. Premising that the three first are imperatively the most important, and the rules laid down for them cannot with impunity be deviated from, the two last may, under certain circumstances, be considerably modified as to the time of planting and the mode or forms of shelter.

1st. *Situation of the Tulip Bed.*—The aspect should be open to the south and south-east, but well sheltered from the north, north-east, and north-west winds. We prefer a perfectly level surface, because the advantage of rain falling upon the bed, and sinking into the earth, is more certain than on a slope. The elevation of the site is also a consideration worth serious attention. It is true the cultivator cannot always choose the site for his Tulip-bed, but where he has that advantage he ought to select the spot neither too high nor too low. The high situation is subject to be troubled with strong blasts of wind which, without an extra amount of care in sheltering them from the effects thereof, will often frustrate his hopes and disappoint his expectation. On the other hand, if the site is low, the flowers suffer from late spring frosts, besides rendering it difficult to drain to that depth necessary to insure fine strong plants, and, consequently, good blooms. Wherever, then, it is in the power of the cultivator of Tulips, intended for exhibition either in competition or on the spot, to choose the site, let him choose the happy medium, neither too high nor too low. If there are no shelters already on the spot to defend and protect these choice flowers from the untoward blasts of the northern quarter, there ought to be some prepared. A close wooden paling is the one most ready and effectual, and if made of deal, or oak, and well-painted, will last several years. Beech, Hornbeam, Yew, or Arbor vitæ hedges, are very excellent, but they require several years growth before they are high enough to screen the flowers effectually. They might be planted behind the paling, to be advancing in growth; so that when the paling decays, the hedges would be high and thick enough to answer the purpose. Whatever shelter is made use of, it should be placed at a sufficient distance from the beds not to draw up the flowers, or prevent a full exposure to light. On these accounts, or for these reasons, the wind-shelters should never exceed six or eight feet high.

2. *Draining.*—The tulip loves a deep soil, and a dry subsoil. It seldom happens that these two requisites are found naturally together. Where there is a good depth of good loam, with a dry gravelly or sandy bottom, no more draining is required than one or two formed with drain-pipes and tiles, to carry off the water that may fall in wet seasons on the surface. An upright shaft, with a grating on the top to catch this surface-water, will be necessary. When the natural soil is shallow and the subsoil clay, or any other water-retaining substance, it will be absolutely necessary to correct this state. First, set out the bed the desired length and breadth, then cast out on one side all the good soil, shovelling the small crumbs; then dig, or hack and shovel out the subsoil, till the bed is eighteen inches deep. After that is finished, dig a drain in the centre of

the bed six inches deep and wide enough to allow the operator to lay down first the flat tiles, and then the circular pipes, with holes in the latter to admit the water to escape into them and then be carried clear away. When the pipes, &c., are laid down, cover them with rubble and then lay all over the bottom of the bed three or four inches of either small stones, broken clinkers, or brick ends. Upon this drainage lay a stratum of short straw or small brushwood; make this smooth, and you may consider the drainage complete.

3. *Manure and Soil*.—To produce fine bold flowers a rich soil is necessary, yet it must not be overdone, because then there is danger of the fine colours running into one another. Proceed as follows: first procure some one-year-old cow-dung; spread over and upon the drains a stratum of this cow dung two inches thick; then mix about one-sixth of very well-decomposed hotbed-dung with the loam thrown out and laid on one side on commencing the operation of draining. If there is not enough soil to make the bed up level as before, procure some good loam for the purpose, mixing it with the same proportion of well-decomposed dung. If the situation is low and damp, it will be advisable to place an edging round the bed six or eight inches deep, of sufficient strength to bear up the soil when it is raised to that height. The best material for an edging of this kind is blue slate, which may now be had very reasonably at any blue slate wharf; the next best is common flags of slate; and the next, slabs of wood nailed to strong uprights driven into the ground at proper intervals. Mix the top surface with a considerable mixture of river sand; this will cause the bulbs to come out of the soil at taking-up time, clean and of a bright brown colour. Should the collection be large, there should be two parallel beds, with a walk between them. Of this arrangement we shall more fully speak under the head "Shelters."

T. APPLEBY.

THE KITCHEN-GARDEN.

Asparagus, do not cut down till thoroughly ripe; if any part of the old plantation is to be destroyed this

season, the plants from that part may be trenched out for the first forcing, and slight hotbeds should be made with half-decayed fermenting materials; if the forcing pits or frames are worked by a hot-water apparatus, care should be taken to begin with a very moderate heat, upon which depends the success of producing a luxuriant crop of large shoots.

Cardoons: pay attention to these now with regard to applying liquid-manure, and earthing up systematically when quite dry.

Celery keep suckered, surface-stirred, and earthed up, regulating these matters according to the different stages of growth; and put out another planting for late spring use. *Endive* continue to plant, as well as strong *Lettuce* plants, and prick out the *Winter Lettuce* in dry, poor, exposed situations, as, if they are allowed to grow too fast, they are liable to get the canker, and will not stand so well against the severity of the winter when the nights get longer. Some of the strong early *Parsley* should have the outside leaves entirely cut off, and only the centre or heart-leaves left to grow on for winter. The present is, also, a good time to pot a few strong plants for winter store. Dredge the growing *Parsley* in every stage with chimney-soot, or soot-water, either of which are excellent stimulants.

All late *Dwarf Peas* should be netted now, or the small tit-mouse at this season will clear every pod of its peas. Late *Dwarf Beans* and *Scarlet Runners*, as the nights get colder, should be protected with light canvass or woollen netting, which will prolong their bearing considerably. We have kept late-planted *Scarlet Runners*, dwarfed by frequent stopping, in good bearing till November, by protecting, as above-recommended, against cold winds and morning frost. *Dwarf Beans* may also be considerably prolonged in bearing by such slight night protection as placing spare lights or any other temporary protectors. Gather *Tomatoes*, *Capsicums*, *Chilies*, and *Radish-pods*, and collect Herbs of all kinds while dry and in good condition. Prepare banks for planting winter and early spring vegetables and salads.

JAMES BARNES.

MISCELLANEOUS INFORMATION.

THE TARVIN HALL EXHIBITION.

ALTHOUGH it may seem somewhat superfluous to offer a description of a great public exhibition several days after it has passed, yet the following account may not prove unacceptable when it is understood that the writer passed some days on the spot in the character of a committee man, stager, and juror—one, moreover, who has had many opportunities, during the last score years, of watching the development of these indicators of future progress.

It is pretty well known that the spirited projector of the Tarvin Hall gathering, Dr. Brindley, was several months too late in giving forth the basis of the scheme to the public: this want of time was, of course, a serious impediment to a full and free development of the scheme, which was, doubtless, in its own nature a bold conception, indicative of the wants of the age. Added to this, the weather was most unpropitious—another serious impediment; continuous squalls from the Irish Channel pestered for days the managers of the spacious tents, and of course annoyed exceedingly the ladies and gentlemen who honoured this novel exhibition with their presence.

The grounds at Tarvin Hall are entered from a point opposite the Church of this extensive parish, and at that end is a superior mansion, with school offices attached, the residence of the vice principal, the Rev. Mr. Waddingham. From this point a main walk or promenade leads to the residence of the principal, Dr. Brindley, as also to the dining and other offices, and to the kitchen and fruit-

gardens. On the left, at this end, is the playground, a field of, I believe, some two or three acres in extent, and on, or rather round this, the tents were disposed; the whole occupying three sides of a square. A tent for refreshments joined the bazaar, a portion of the building adjoining the residence of the principal; and this was flanked, right and left, with a couple of tents, which contained matters of diversion for the more juvenile portion of the visitors. An enquiry or committee tent, and three other detached tents, bearing the titles "Agricultural," "Horticultural," and "Miscellaneous," completed the tent arrangements. In the whole there was at least a quarter-of-a-mile of tent accommodation. I ought here to observe, that there was a rustic building of some extent devoted to the exhibition of the feathered tribes, where the noise and crowing of the huge Cochins, and others of this interesting division of the animal kingdom, assisted in keeping up the animation of the scene. The doctor has at least one hundred youths in this seminary; and the course of discipline observed must, doubtless, fit them to become very useful members of society, in whatever profession they may be placed.

Thus far for a brief outline of the main features; proceed we now to give a slight detail of the exhibition matters. These extensive tents were about one-half filled up to the period of opening; but so many, through ignorance of the principles and modes of exhibiting, continued to forward

materials of all kinds long after that; even on the Friday morning there were boxes still to unpack. Now this, although awkward, is not so very surprising when we consider the novelty of a four days' continued exhibition in a purely agricultural district.

Mr. Chivas, of Chester, had a most extensive collection of *Wheats*, amongst which were some singular kinds, and others of importance; *Oats*, also, and *Barley*, he had in great variety, all in the straw. Besides these, a very extensive collection of *Grasses* in pots, all named, and dried bunches of most of the kinds. Messrs. Dickson, of Chester, had a very interesting screen covered with specimens of *Grasses*, from the common *Poa* up to the *Arundo donax*, in all about 300, and shewing a great variety of habit. Besides these, there were many specimens of the *Corn samples*, some from Fentonbarns, in Scotland, &c., of a little novelty. Mr. Patin, of Stapleford, had some superior *Wheats*, *Chevalier Barley*, &c. The roots were very abundant, and of high character in many instances; and it would be invidious to point to particular samples, so many being nearly equal. The *yellow* and *red Mangold*, and the *Swedes*, were in the utmost profusion, and there were some respectable *Carrots*, *Parsnips*, *Drumhead Cabbages*, &c. Specimens, also, of *Beans* in the haulm, and samples of various agricultural seeds. The *Potatoes* were exceedingly interesting, and in great variety; and numbers of seedlings of much interest and promise were to be seen on the tables. *Flax*, also, in its various stages of dressing; and *Medicinal Herbs*, as the *Valeriana sylvestris*, the *Inula helenium*, &c., came from Mr. G. Liddall, farmer, near Alfreton. *Hops*, also, and *Apples* of the cider kinds, from Hereford, with various other agricultural matters too numerous for detail. The garden vegetables were chiefly confined to the cottagers, and consisted of *Cabbages*, *Carrots*, *Parsnips*, huge *Onions*, &c.; *Fruits* were tolerably abundant. There were some fine Providence and black Jamaica *Pines*, good Hambro' *Grapes*, *Peaches*, *Nectarines*, *Apricots*, *Currants*, *Gooseberries*, *Plums*, *Cherries*, &c.; and abundance of garden *Apples*, with some *Pears*. On the whole there was an immense quantity of stuff produced; indeed, had the quantity been confined to the usual extent of tables, the bulk would have appeared enormous. As to *flowers*, there was a disproportionate amount; and had it not been for the extensive collections of the *Coniferae* by Messrs. Dicksons and Skirving, and some very new and valuable shrubs from the north of China, as also the *Rhododendrons* of the Sikkim Himalaya, by Messrs. Standish and Noble, of Bagshot, the plants would have been scarcely worth pointing to. I ought to mention that there were various *agricultural implements* by Messrs. C. J. Young and Co.; as, also, by Messrs. Harkes, of Knutsford, an abundance of field-gates, rotary flower stands, and other ornamental wire-work. Minton's encaustic tiles, and Neighbour's beehives, also were on the tables. Want of space precludes any further extension of the report, and I must conclude by observing that further reference may be made to the catalogue about to be published by Mr. Archer, to whom the task is assigned, as, also, that of making known the awards.

R. ERRINGTON.

The *Florists' Flowers* were exhibited in good condition, but not numerous. There were collections of cut *Roses* from Messrs Lane and Son, Berkhamstead, and Messrs. Paul of Cheshunt. The fame of these growers is so well known, that it is superfluous to state that on this occasion the flowers were fine, and did them great credit.

Mr. Wilmer of Sunbury, was there with two or three good stands of cut *Carnations* and *Dahlias*, and Messrs. Paul had two stands of splendid *Hollyhocks*. The cottagers had also some good flowers of different kinds, which did credit to them, and that part of Cheshire. There was a stand of *Pansies*, which had been good flowers, but the rain and storm of Tuesday completely destroyed them. The most remarkable feature of the exhibition was a splendid collection of cut specimens, correctly named of *hardy evergreen and deciduous ornamental Trees and Shrubs* grouped in their natural orders. The collection extended nearly the whole length of one tent, measuring nearly 120 feet.

T. APLEBY.

PLANTING.

(Continued from page 361.)

Now we have prepared and taken up the tree properly, let us further set to work and plant it; of course the roots are kept moist by some wet straw bound round them, or they have otherwise been plunged in a puddle made of earth and water to the consistency of paint.

How preposterous it is (whatever the diameter of a hole or fruit border may be) to dig four or five feet deep, in order again to fill up with rich stimulating dung and mould, for the object in view, namely, a *fruitful tree*. Posterity is certainly the beauty of creation, so, if you plant a fruit-tree after this fashion, it is very kind of you, and a sacrifice, for, unless you are a young man, depend upon it your heirs, or other posterity, will reap the harvest.

We are now arrived at a very important stage of the proceedings, when surface-soil, subsoil, and drainage claim attention. Before you attempt to plant out fruit-trees, you must consider whether the soil is ungenial or the situation unnatural, as both these disagreeables may, in a great measure, be combated against. If the soil is open, free, and sound (like an honest man's heart), of average depth, and lying upon a dry subsoil, nothing further is required but to plant the trees after a manner I will presently show. I have had to do with this quality of soil, and very very much worse, both as regards earth and hearts into the bargain; and so far as my experience goes, I find that however hungry, mean, and worthless a soil may at first sight appear, it is much more capable of improvement, and inclined to be *honest* toward the cultivator, through "honourable" treatment and "faithful" reliance upon it, than some hearts I could mention, albeit glossed over with distinctions and thin surface-soil, fascinating and pleasant to look upon.

It is now seven years ago, and I resided in a cider district, where there were apples enow and I thought some to spare. A cider apple, generally speaking, is anything but agreeable to the palate, and I confess to a feeling coupling the useful with the ornamental,—a potato is a most useful vegetable, and an almost indispensable tuber to our dinner-tables all the year round, still a cauliflower, a dish of peas, sea-kale, or asparagus, in their season, as adjuncts, who should despise? The same with the apple; in a district where the cider apple, as a system of economy, very naturally perhaps, should take the lead, still, in a comfortable ordering of things, I thought a few good dessert apples introduced could do no harm. Now, this very idea, a spur to a beginning, has caused me to dabble in fruit-tree culture ever since, and, probably, will do so, so long as opportunity continues to offer. About the time that these thoughts began to work for themselves a place in my pate, I happened to visit a district where only kitchen and dessert fruits are cultivated, and cider, accordingly, is unknown. This was the time; a bundle of grafts was speedily transferred to my carpet-bag, which, about a month after my return (beginning of March), were whip-grafted on some young crab stocks. (I intended these trees to be dwarfs, Paradise stocks would have answered better, but there was none near at hand, and under my own eye.) Every graft took and did well.

I lived close to a man well versed in grafting (who had been much employed for this purpose, in his time, by the late A. Knight, Esq., President of the Horticultural Society). Saddle and cleft-grafting were his chief modes; but cleft, more particularly, he was a proficient in. I will not tediously describe these processes, but I will mention that he always used two-year old wood, as scions for large trees in cleft-grafting. Poor old J. H., as well as grafter, was village carpenter to boot, and also a man of taste; for, upon my questioning him, some years ago, the reason why he left off joining the singing choir at church, with an habitual shrug of the shoulders, and a peculiarly nasal and inharmonious delivery of speech, he exclaimed with all the force of a walrus—"If we are to sing, let's sing; but if we are to shout, let's shout!"

I have no soldiers under me, and am under the necessity, generally speaking, of doing and acting for myself. Now, in planting a tree, this is rather difficult, though not so difficult but that it can be surmounted; somebody or something animate or inanimate, there must be to keep the tree in its proper position at the time of plant-

ing; the inanimate occurred to me in the shape of a post! I prefer it to the animate, unless I meet with a helpmate equally interested with myself in the operation. I seldom met with one who did not tire at my proceedings, and become woefully attacked with the gapes, which always gives me the fidgets. When I catch a man yawning at his work, I conclude it is anything but interesting to him; and rather than allow myself to be made uncomfortable on his account, I would rather undertake the thing by myself, if possible. The best assistant I ever had was in planting some tree roses,—a little child (a girl), with a tiny spade!

According to the diameter of the roots of a tree, bush, or shrub, so is the diameter of a hole to exceed them four feet (*viz*, when the roots are spread out horizontally in it, there must be two feet exceeding the breadth of them all round); so must be the length and substance of a stake, in proportion to the tree, be driven firmly and perpendicularly into the centre of this hole.

If you are about to plant on a large scale, the *thorough drainage* of the soil, upon a system, is an important point to be considered; for it is all-imperative that fruit-trees should have a well-drained soil, if they are intended to flourish. This observation carries me back to a case in point, and will enable me to explain a circumstance which forced itself upon my uninitiated practice, as I watched the progress in growth of the young grafted trees above. The manner of taking them up from their nursery and transplanting them, I remember, was off-hand, indeed; but let that pass, I could not refer to it with pride. There were between twenty and thirty of them; part were planted on a raised situation, which some years previous was newly-formed ground, deep, and very good, the remainder in a cold, inferior soil. Now, only one tree on this latter flourished, and was withal inclined to show early and abundant fruitfulness, more so than those in the rich soil. I naturally felt interested in these young trees, being, as they were, fabrics of my own, and to find this tree a single exception to all the others puzzled me completely. If it had been the only variety of the kind, I should, probably, have attributed it to that circumstance, concluding it was its natural disposition, and the situation suited it, but I had others of the same variety (Hammond's Pearmain) close to it, and on the good ground besides, which showed themselves with quite different aspects; the former stunted and covered with lichen, the latter growing away furiously,—a mystery which, so soon as autumn arrived, I was determined to solve. The single tree, so soon as that time arrived, was the unfortunate to be pounced upon. I began digging a considerable distance round it, and instinctively preserved the roots,—yes, even the top roots, for these were not cut off, as they should have been at the time of transplanting, and, fortunately, remained in this case to teach me a lesson. In searching down after them, I came upon a quantity of—what—rough stone, that had been buried there, apparently, for no other purpose, some time or other, than to place it out of the way, and the roots, so soon as they had sent down fresh fibres upon them, were starting away in all directions horizontally where the stone interposed as an obstacle to check their progress *downward*. Here was a nice little ocular demonstration to guide me in my after-undertakings in planting, and requires no comment. If Messrs. Beaton and Errington, even in their beginnings, happened to stumble upon a circumstance of this description, I am sure it did their hearts good, and assisted them to lay a foundation in their extensive practice, and preliminary to those excellent articles on the subject which are now by them sent forth to the world; and a few years before I knew such people were in existence, the pith and substance was forcing itself upon me, in a small and quiet way, to my edification and comfort.

UPWARDS AND ONWARDS.

(To be Continued.)

REMARKS ON THE SPRING AND SUMMER OF 1851, AS REGARDS FLOWER-GARDENING.

It rarely happens that a season passes away without being noticed as favourable, or otherwise, to some particular produce or other. That the past and passing season has been equally liberal of its favours and its frowns, I think every one will bear testimony. A spring, in no respects re-

markable, except for its length, succeeded a very mild winter, and was itself followed by a summer, which (unless we are to be guided by the expression of some effeminate object returning from half-an-hour's walk on a warm afternoon) has been equally void of anything extraordinary. Nevertheless, the failure or success of certain crops denote that something has been different to former years, and it is, therefore, to the effects produced by the season that I now address myself.

It is well known that the absence of frost is sadly felt by the husbandman who has a stiff soil to till; nevertheless, a popular error seems abroad on that subject, it being common to attribute the adhesive, stubborn, nature of the soil, after mild winters, to the wet that falls. Now, last spring was far from a wet one; yet all stiff lands became, what in some districts is called "livery." What effect the wet had in causing that, is not for me to say, but experience proves that frost removes that adhesive tendency, probably by its expansive powers in elevating the ground, and making it permeable to the action of the atmosphere; but whether frost be the agent in pulverizing the earth, or only paves the way for another power to act, is immaterial to our purpose; suffice it to say, that the early part of summer found the ground in a sodden, unkind state of culture, equally bad to the flower-gardener as to the husbandman. Certainly the former had more means to overcome the difficulties of the case than the latter; but, on the other hand, he had a more delicate and sensitive crop to cultivate.

Commencing, then, with the spring, I shall give a list of a few of the half-hardy plants which stood the winter without any protection, and their after condition. First in the list is the *Sweet-scented Geranium*, the large or *Oak-leaved* variety; growing in rather a dry place it looked almost as well all the winter as it did in the September previous, and it was only about six weeks, or so, in spring, that it looked at all hurt. In fact, from the first of April to the middle of May was the period when all the outstanding plants showed tokens of having suffered from the inclemency of the season; however, this *Geranium* speedily recovered, and an unbroken bed of it afforded many a sprig for summer nosegays. The few *Scarlets* that were left out perished, and of course the *Variegated* died also. *Zauschneria Californica*, has also lived through the winter and flowered beautifully this season, quite redeeming its character, which last year it seemed likely to lose; thus affording us another proof that we ought not too hastily to jump to conclusions drawn from imperfect data. The various *Salvias* also survived; although the *fulgens* had its tips destroyed, yet the great bulk of its stems remained unscathed; the *Patens*, of course, died to the ground, and sprung up again, and the same may be said of what few *Dahlias* were left in the ground. The latter, as might be expected, pushed up very strong, and have been but little checked by the dry weather we have had in August, while the spring-propagated ones have made little progress for some time. One plant, which I expected to find quite hardy, or nearly so, has proved more tender than many others—the *Veronica speciosa*. It was very much cut—in fact, nearly to the bottom—while *V. Lindleyana* stood admirably, and has bloomed beautifully. Most of the detached plants of *Verbena* lived through, where they were not destroyed in dressing the borders; but a bed of scarlets, in rather a damp place, perished in the winter, while a bed of a pale-coloured variety, in a drier situation, lived through and bloomed early, and have kept on doing so. I am sorry I cannot say so much for *Calceolarias*, which in almost all cases stood the winter, and bloomed with a degree of profusion, early in June, that I never witnessed in *Calceolarias* before. I had three beds of the old yellow, which might have stood comparison with anything of the sort, either then or at any other period—not the least gap to be seen, and, I might add, not any foliage either, so dense was the flowering. At that early period they were a great acquisition, and I flattered myself they might be prevailed on to continue their services the whole of the season. Unfortunately, such has not been the case; after the first heavy crop of flowers had passed away there were none to succeed them; the plants, exhausted by the effort to produce so many, sought in vain for additional food to supply another crop; doubtless every particle of soil, as deep as the *Calceolaria* descends for nourishment, was already a close mat of roots; heavy

drenching with water was all we could afford them, but that was not sufficient; flowers were formed exceedingly tardily, and individually were very small; and though at the present time (the first of September) there is a little display, and a promise of better things, yet they do not look anything like so well as those beds planted with young plants in May. Single plants, standing in mixed borders, have done somewhat better; but even they, after the first crop of flowers was over, relaxed their efforts very much.

These facts will teach me a lesson for another year, and, I trust, may likewise be of service to some of your readers. Continuing this subject, I may say, that what *Fuchsia* stems were not cut down in autumn, stood the winter with only the loss of the extreme points. Unfortunately, most of those left were in rather a shaded border, and absolutely did not come into flower until after those which were cut down the usual way; one or two standing more exposed did not flower any earlier, so that I am half led to believe that nothing is gained by the *Fuchsias* standing the winter; but my experiments that way are scarcely satisfactory. I would rather like to hear what conclusions others have arrived at in that way. The *Cuphea strigulosa* stood, of course, besides shedding its seeds, which grow in gravel walks, and everywhere. The season also favoured the more shrubby plants, as *Cytisus* and *Coronilla*, both of which stood unhurt, as also did *Diplacus puniceus*, and some others, *Plumbago Larpenæ* for instance, which, however, does not promise to flower a whit the sooner for the favours shown it.

Apart from the subject of flower-gardening, yet bearing on the mildness of the season, I may remark that the Conifer, *Cryptomeria Japonica* (which promises to become a useful timber tree), put on its usual dull yellow garb last winter, and retained it quite as long as usual, proving it to be a natural change the plant is undergoing, rather than the severity of our winters, to which some have attributed its unsightly appearance for so many months.

Having detailed such incidents relating to the winter and spring, in their effects on flowering plants, I now proceed to the summer; and as it is more important to know the result of certain processes likely to be repeated, I will first relate what I consider to have been failures in my bedding-out affairs.

First, then, and I may say for the first time in many years, the blue *Anagallis* has been almost a complete failure; what with its tardy growth, and frequently plants dying off, my beds of it do not look well, and will never do so this season. I guess the kind I have has been too long in cultivation, and wants to be renewed by seed. The blue *Isotoma axillaris* is also exceedingly late. Not having had much experience in this plant—pray does it require a damp place; mine was, perhaps, too dry? The plants all grew and flowered, but so very slowly as almost to make their progress imperceptible. (It is tender.) The season has been too dry for that pretty *Calceolaria*, *Kentish Hero*, which, flowering abundantly when first planted out, nearly ceased, doing so some time afterwards; in fact, this *Calceolaria* almost flowers itself to death, and the very long time its flowers retain their beauty will ever make it a favourite; only one thing, the plants turned out early in May are even now scarcely double the size they were then, although they seem healthy, and are growing under different circumstances. Another disadvantage it labours under is, that its flowers, instead of being elevated above the foliage, are more often prostrate on the ground, detracting much from its merits when it forms, or ought to form, a feature in a given set of beds. I should like to know how it has succeeded elsewhere. The little pretty *Cuphea platycentra* has this season displeased me; its flowers, never very conspicuous at a distance, have certainly, this season, been fewer than usual; and when a glare of colour is wanted, I fear this plant will seldom give satisfaction. Another sturdy, useful bedder, or for borders, has flowered more sparingly than usual—the *Scarlet Pentstemon*; so much so, that I have almost threatened to dispense with its services in that capacity. A very promising bed of plants that had stood over the winter have not flowered to my mind, although they seemed healthy and otherwise all right. I may say the same of *Antirrhinums*; the fancy kinds of these are so capricious that no dependence can be put on any of them, except the self-coloured ones, and these, I would say, only deserve a place in the mixed border. Of the *Oenothera* I never was very fond, and this season has

not improved their position. The new one, *prostrata*, may be better than the older fleshy-rooted kinds, and a bed of it, mixed with the *Linum flavum*, may, perhaps, prolong the season of blooming, the *Linum* coming in first; but I have not tried them so, only I think of doing so another season. It is a pity but the *Ageratum* could be got to bloom earlier. It is rare that one sees any quantity of bloom before the middle of August, and this season is no exception; the colour is an acquisition, otherwise I should like to discard them from the beds. Another plant I have rather lost conceit in, only I fear I shall be accounted seditious, but I venture it—the *Heliotrope*. Assuredly, this plant blooms more sparingly than formerly, and, latterly, I have been in the habit of mixing something with it,—last season, a *Verbena*, which helped it out; this season I have planted the dwarf-bedding *Dahlia*, called, I believe, *Zelinda*. It is a purple, not good as a show flower, but very dwarf and showy, and blooming freely at twelve inches high. Its colour is not the one contrasting best with the *Heliotrope*, but, as it is, it much improves it, while the *Heliotrope* threatens to overcome it, and presents but few flowers. As no flower-garden of any extent can be well complete without this favourite, I suppose it must be retained; but its disgrace shall not be prevented by me. Of the late additions to our flora, likely to be serviceable to the flower-garden, I am not acquainted with any likely to prove good bedders; *Dielytra spectabilis* is quite unsuited for that purpose, and all annuals, both new and old, I hold to be equally out of place there, unless it be a single bed of *Mignonette*, which retains its good properties to the last. The *Lobelia ramosa* which, I believe, continues in bloom as long as most annuals, dies away when its place cannot be well supplied by anything else. But some plant them as auxiliaries to the plants forming the perennial beds; in that case, they may be useful, yet none but the very early flowering ones meet my taste. However, this is diverging from my subject, which was the unsuccessful bedding plants of the present season; and if to the list of those given, I add the *Lotus Jacobea*, which grows too strong, and does not show its flowers well, except on close inspection, and the double purple *Senecio*, *S. elegans*, which dies very often in September, and this season in August, I think I must conclude my lists of unfortunates, leaving to another week the more pleasing duty of noticing those which, in my opinion, come near to the standard of what a bedding plant ought to be. In being thus fastidious, I have the example of the florists in my favour; only in our different pursuits the object sought to be obtained may differ, yet the mode of expelling all but the really good bears some resemblance in both. S. N. V.

TO CORRESPONDENTS.

HEATHS: SIX TO FLOWER EACH MONTH (For a Correspondent).—JANUARY: *Colorans*, white; *Coccinea*, scarlet; *Passerina*, white; *Vernix coccinea*, red and orange; *Persoluta alba*, white; *Cubica*, pink. FEBRUARY: *Willmoreana*, white and red; *Costata*, red; *Holosericea*, white; *Gracilis*, red; *Onuta*, red; *Præcox*, light. MARCH: *Banksia*, straw; *Boureaana*, white; *Erubescens*, white; *Ignescens*, scarlet; *Pater-sonii*, yellow; *Sebans lutea*, yellow. APRIL: *Propendens*, blush; *Primuloides*, red and white; *Perspicua nana*, white; *Mutabilis*, red; *Sindryana*, red and white; *Fastigiata lutescens*, yellow. MAY: *Suaveolens*, light; *Ventricosa superba*, blush; *Vestita alba*, white; *Aristata major*, orange and crimson; *Mirabilis*, cream; *Hybrida*, red. JUNE: *Cavendishii*, yellow; *Tricolor elegans*, red and green; *Ventricosa grandiflora*, blush; *Florida*, white; *Shamoni*, white and red; *Wilsonii*, white and red. JULY: *Massonii*, red and green; *Retorta major*, rose; *Jasminiflora*, white; *Infundibuliformis*, rose and white; *Parmentieri rosea*, rose; *Depressa*, yellow. AUGUST: *Halicacaba*, white; *Ampullacea*, white; *Gemmiferu*, orange and green; *Oblata*, red and white; *Juliana*, red; *Princeps*, rose. SEPTEMBER: *Vestita coccinea*, red; *De Cliffordii*, blush; *Lambertiana rosea*, rose; *Rupestriis*, white; *Cerinthoides*, scarlet; *Carminata*, white. OCTOBER: *Solandri*, red; *Taxifolia*, blush; *Grandiflora*, yellow; *Grandinosa*, white; *Hartnelli*, red; *Russelliana*, red. NOVEMBER: *Regemians*, light; *Ackeriana*, red; *Decoru*, light; *Discolor*, blush; *Gracilis*, red; *Transparens*, blush. DECEMBER: *Exsurgens*, orange and red; *Hyemalis*, white; *Lunuginosa*, brown; *Mammosa*, purple; *Nitida*, white; *Linneana*, purple and white.

HENFREYA SCANDENS (F. W. T.).—This stove climber is not so difficult to manage as you have read of it; but, of course, all stove plants are much benefited at first by bottom-heat. It is not, by any means, a first-rate plant, since we have a much better one in the same way—the *Stephanotis floribunda*. Turfy loam, with a third of sandy peat, and a little leaf-mould, suits it best. Strong moist heat while it is growing fast; less water, and cooler towards winter, and to be kept rather dry in the winter months, is the best treatment. A young plant should be cut down to a foot or so from the pot in the spring when it begins to grow.

RHODODENDRON GIBSONII (Ibid.).—This is a beautiful thing, and the treatment you propose is the right way to manage it. *Begonia cinnabarina* is also beautiful, not at all bad to keep in winter, the roots only

requiring to be kept dry while it is at rest, like the old window *Begonia*. It is too late now to do much good with it from cuttings. Mr. Appleby noticed this beautiful plant lately, with full directions for its treatment, &c.

GOLDEN-CHAIN GERANIUM, &c. (R. L.).—Mr. Appleby has it, or should have it, on sale; but as you propose seeing it at the fountain-head, we need say no more of it here. We believe "our worthy friend" will soon give a descriptive list of the whole of that class. The only means of procuring admission to the gardens is to apply, in writing, to the proprietor, who is said never to refuse. There is a stated day (every Friday), but that is all we know. Apply immediately, and your other questions will be better explained on the spot. It is almost the only show-place we ever visited without being disappointed.

PLANTS TO TRAIN OVER A HOUSE (H. B. B.).—Plant the *Ivy* as you propose on the south-west aspect; let it have a good border to grow in, and procure strong plants, and as tall as you can get, to be planted any time next October or November. We would plant the opposite aspect in the same way, and then plant two, three, or four kinds of the best *evergreen climbing Roses*, to train over the *Ivy*. There is no way of heightening the effects of *Roses* so much as this. You may then bud *Noisette Lanark* and *Souvenir de Malmaison*, as the best white roses, and a dozen or more of other sorts on the climbers. For the south front, the *Glycine sinense* would look splendid, and if it did well would soon cover a large space. On each side of the door, or windows, we would plant *Chimonanthus fragrans*, the most deliciously-scented flower we have in winter. Strong plants of the whole; the balls shook off, if they are in pots, put into good rich soil, would soon cover any house. In many places the common *Jasmine* is used to cover such walls, but we dread to recommend it, because we never yet saw it well managed except by professed gardeners.

HOME-MADE WINE (An Old Subscriber).—Mr. Livett says, "The drachm of isinglass to fine ten gallons was intended by me to be of apothecaries weight, but a few grains, more or less, will be of no consequence. With regard to bottling, I will send you, when I am less engaged, a few lines on the subject, which shall answer the queries as to bursting of bottles, &c. I do not know the gravity of good cider, or rather apple-juice, but I will endeavour to ascertain it during the cider season now approaching. I will send you another paper on 'Home-wines,' in which I can embody these replies if you wish." We do wish it certainly.

ROSE-LEAVES BLOTCHED (Georgiana).—Your gardener, who attributes the disease to the influence of "Witchcraft!" knows "the cause of it" just as well as any man living. He may be glad to know that the following spell will keep all the witches in the country out of the garden. When he first sees a new moon let him prick his left thumb with a rose-prickle, let a drop from the wound fall on an old horse-shoe, and then nail this over the garden-door, and say, "COTTAGE GARDENER" three times, and our word for it, the witches will never enter the garden again! But rose-blight will come every year, notwithstanding. There is not a garden nor a rose nursery in the three kingdoms, at this moment, free from the parasitical fungus which infests your rose-leaves. When the wood is ripe, or nearly ripe, the leaves of nine-tenths of all roses die off, blotched with this fungus, and no one heeds it, and we never find it do much harm for the next crop. We strip off great numbers of such leaves every September, and thin the bushes from weak and misplaced shoots; then we give a good watering of liquid-manure to all the perpetuals or autumn blowers.

COCHIN-CHINA FOWLS (B—K—).—Anster Bonn says—"From the account which you give, both of the appearance and disposition of your Cochin-China fowls, I am led to believe that they are of the genuine sort, but it is difficult to judge from a description only. It should be borne in mind, both by dealers and amateurs, that there are two kinds of Cochin-China fowls; the square-built variety, which I have so minutely described, which I keep, and which (perhaps on that account) I most admire, and those which slightly resemble the Malay, but which I believe to be the pure-bred Cochin-China, notwithstanding. When these throw out the indispensable single comb, before and while laying, they greatly lose the Malay-like appearance about the head. The weight of your birds (7 lbs. for the cocks, and 5 lbs. for pullets of the March brood) I consider good for their ages. Respecting the price, I am at a loss how to offer you any advice, as I am not a dealer, and do not know what dealers are in the habit of offering for Cochin-China fowls. They are, of course, entitled to fair remuneration; I think Mr. Nolan suggests one-third of the selling price as their share; but the sum you name (10s.) certainly appears very low, if the birds are genuine, and is, I think, more than would be offered if they are not so."

DUCKS FOR A WEEDY POND.—A Parson's Wife says, "I have some Musk, or Muscovy, Ducks, neither black nor white, but pied like a magpie; they were purchased last spring for the chief purpose of keeping clean a small piece of water. For this they are useless, being seldom upon it; and this, it now appears, is their character. Two of the ducks laid and sat very well, but took an unusual length of time about it—six weeks each, all but one day. If this is their habit, it is a pity it is not known, as more than one little one was killed to see whether it was alive. The third duck was very anxious to sit, and made her nest under the knife-board, sitting very steadily in spite of the daily clatter over her head. Whether she sat five weeks-and-a-half, or six weeks-and-a-half, is a disputed point, but she hatched sixteen fine young ducks out of seventeen eggs, and then never looked at them again, except to peck them. They are nursing by hand, and she is amusing herself with the drake, little thinking that she is destined to the stewpan. Can you recommend a breed that would keep down the weeds, without giving unreasonable trouble? The handsome black Botany Bay ducks were tried, but they were so very wild that they could not be brought into the yard to sleep or to sit, and so the foxes, or other thieves, carried off the young, and, at last, all the old ones likewise." We never knew ducks keep a pond free from weeds; nor do we believe they produce any other effect in it than to make it filthy. Planted with Water Lilies, their broad leaves would be the best weed-destroyers.

HARDY CLIMBERS (Ibid.).—All the strong *Clematises* ought to grow in a grove, if planted in barrels. *Clematis montana* does not flower with us before May. The only one of them which blooms in our climate in March is *C. cirrhosa*, of which there are some varieties. There is not a climber

on our lists suitable for your purpose which will flower before May. The *Glycine sinensis* grows and flowers beautifully with us in the shade. The *Ayrshire Roses* ought to do with you. We have *ruga* all over an old Oak, flowering where the sun never reaches it.

ROSE-CUTTINGS (Verax).—Your plan is good, but a better way would be to say that Tea, Noisette, Bourbon, Hybrid Bourbon, Hybrid Perpetual, Ayrshire, Multiflora, Boursault, China, Banksian, Macartneys, and Miniature Roses, will, each and all of them, come from cuttings, in heat, any day from February to October; that the spring months are the best for them in hotbeds; and after the middle or end of May, under hand-glasses; without heat is less trouble.

HONEY VARYING IN COLOUR.—A. D. R. says, he "took a cup of honey from one of his hives in July weighing 6 lbs.; it was beautiful. He takes another cup in August from the same hive, also weighing 6 lbs., but the honey was very black, looked as if it had been mixed with soot, and was not half as good as the first. Can THE COTTAGE GARDENER throw any light on the subject? Also, he has noticed that in his stock-hives, two and three years old, the combs are quite black, and half-filled up with rubbish; the bees seem indolent, and the hives do not weigh so much as swarms of this year of eight weeks' old. What is the reason of this? And should any of the old combs be cut out?"—Honey collected in May and June is always very fine, while that of July and August is generally dark and not so good flavoured, but this year much darker than usual, and, in some places, as black as treacle. Your stocks were weakened by swarming. It is now too late to cut out any of the combs, and if they are only three years old it is not necessary; the cup of dark honey had better be given to them as food.

PHLOXES (E. P.).—Both *Celestis* and *Nitens* are hardy and do not require winter protection.

CATERPILLARS (G. W. Howlett).—These found upon a Lime-tree are the larvae of the Puss-Moss, and very common.

DISEASED LAUREL (T. A.).—When we first saw "the vermicular woody formations springing from all parts of the inner bark" of your Laurels, growing at Lyme Regis, we thought they were fungi, but upon showing them to a botanical friend, he suggests that they are only fibres protruded from the old stems. In a place, warm and moist like Lyme, and if the Laurels are so situated as that the warmth and moisture are increased, it is probable that the formations are rootlets, such as are frequently produced by the stems of Vines in the warm, moist atmosphere of the stove.

CONSTRUCTING A PIT (J. Betsworth).—If you will buy our No. 105 you will find one drawn and described.

PIERCING TREES (Docilis).—Every wound injures a tree; but an Ash and Poplar will not have "their vitality endangered" by being pierced so as to render them efficient as straining posts for a wire fence.

LAUNDRY (W. K—, W.).—Our correspondent will be obliged by any one describing "a perfect and economical laundry, with information respecting boilers, washing-machine, dry-room, and other necessities."

BREWING WITH SUGAR (Hussey).—The directions are too long for republication. They are in No. 116, which number will cost you two-pence.

YUCCA GLORIOSA (A Subscriber).—If the flowers on your fine *Yucca gloriosa* are not over by the time you read this, let the flower-stalk remain on till it is quite dry down to the heart of the leaves, and then cut it off. If the flowers are over, cut it now in the green or soft state; but the former is the best plan. From the moment the flower-stem of a *Yucca* is seen rising from among the leaves, the plant should be well watered once a week until the most part of the flowers are open; and, if it could be managed, no more water should reach the roots for the next four months. These beautiful Lilies are sadly mismanaged in many places; they are either too wet at the root all the year round, and so kept growing, or are nearly starved in poor, dry soil, and will not flower at all.

LETTUCES (W. K—, W.).—"I had a quantity of hardy green lettuce, which stood out through last winter; and this spring, when my gardener cut them, he left the roots in the ground, and, to our surprise, we had a most excellent second crop of lettuces from these roots; many of them had seven and eight tops to a root, none less than four. Is this usual? Would it not be a good plan to take up some old roots for winter forcing of this sort?" It is not unusual for lettuces to produce a crop of sprouts, but we never saw any of these sprouts heart, or at all equal the crop of lettuces obtainable by a fresh plantation. The only use we ever made of such sprouts was for vegetable soup.

CHRYSAANTHEMUMS (C. L.).—From your attention to your Chrysanthemums you ought to have a good bloom and good plants, too, if you have been mindful that your plants have plenty of room to stand upon, so as not to touch each other in an open situation. You say they have never wanted for water. Sometimes, in a gloomy situation, and perhaps not all right as to drainage, too much water will cause them to look yellow or sickly. In such cases the plants should be allowed to ask for water before watered again, and see that the drainage is all right. We never think of using manure-water in the early growth of these plants, nor till after the final shift, and the pot becomes filled with roots, and seem to need stimulus, then a good watering of manure-water once a week is very beneficial to the plants during dry, hot weather. We think, on the whole, that your plants looking a little yellow, and losing some of their lower leaves, has been caused either by a want of light from being placed too close together before they were last shifted, then shifted and set out in some more open situation, and distinct from each other, or from an insufficient supply of water at some time or times. Any such great changes cause the plants to look a little yellow, or lose some of their lower leaves. You have paid great attention to many shifts and manure-waterings during the early growth of the plants, and your final shift was on the 19th of June, therefore your pots must be pretty full of roots long ago, and need very much water. As we have had some very dry and hot weather, if your plants stood out much exposed to the sun they would, in your sized pots, need watering even twice a day sometimes, and after being watered well at the root, should have been well watered over head, too, and, during hot, dry weather, this repeated once a week.

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WEEKLY CALENDAR.

M D	W D	SEPTEMBER 18—24, 1851.	WEATHER NEAR LONDON IN 1850.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bef. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in In.						
18	Th	Sycamore leaves fall.	30.073—29.888	69—46	E.	—	40 a. 5	8 a. 6	10 a 17	☾	5 47	261
19	F	Acorns fall.	29.808—29.700	70—53	S.E.	02	42	6	11 9	24	6 8	262
20	S	Sun's declination, 1° 8' N.	29.632—29.463	66—53	S.	10	44	3	morn.	25	6 29	263
21	SUN	14 SUN. AFTER TRINITY. ST. MATT.	29.813—29.531	69—41	S.W.	50	45	1	0 14	26	6 50	264
22	M	Lime leaves fall.	29.889—29.834	71—46	S.	06	47	v	1 29	27	7 11	265
23	Tu	Herald Moth seen.	29.803—29.753	71—51	E.	04	49	56	2 51	28	7 31	266
24	W	Beech mast falls.	29.724—29.715	67—45	S.W.	12	50	54	4 15	29	7 52	267

WE lately met with a volume so much in advance of the age in which it was published, that we have made even more than our usual research for information concerning its author, though we regret that the harvest has not been in proportion to our labour. The volume is a third edition of *The Surveyors Dialogue*, and was published in 1618. In its fifth chapter or book, the author copiously and effectually enforces the importance of draining, "For," he says, "as the ground becomes freed of the superfluous moisture, so will the weeds that are nourished by it begin to wither, as they are deprived of their nouriture, which is too much water, which also breedeth too much cold." Now he who thus understood, more than two centuries ago, the reasons which render draining so beneficial, was JOHN NORDEN, a native of Wiltshire, where he was born about 1548, was admitted of Hart's Hall, Oxford, in 1564, and became there a Master of Arts in 1573. He had patronage, but little else, from the great Burleigh, and in his old age obtained, jointly with his son, the place of Surveyor to the Prince of Wales; but it came to him in his old age, when he had little strength to fulfil its duties, or to enjoy the rescue from want, which its small emolument afforded; and even this came to him at the recommendation of a foreigner. In his dedication of that part of his *Speculum* which contains an account of Cornwall, he alludes to being appointed by the King (James the First), to accompany Don Antonio, the exiled King of Portugal, with his suite, when he journeyed to London from the West. He adds—"they were for the most part very learned," and took an interest in his topographical researches. Pleased with his acquirements and courtesy, the royal exile recommended him to James the first, but, as we have before observed, the preferment which was its consequence, came to him only to smoothen his path to the grave. He had always been in straitened circumstances, yet he had always been enterprising and industrious, and we can only view his indigence as one of many instances demonstrating of what small account is wealth in the estimate of Him who is the disposer of all events.

The earliest monument of his industry, is the first part of his *Speculum Britannia*, dated 1593. It is dedicated to Queen Elizabeth, and in his address he styles her "powerful protector of the faith and undoubted religion of the Messiah, the most comfortable nursing mother of the Israel of God." There is added an epistle to Lord Burleigh, and we hoped to have found in it an acknowledgment that that great statesman had aided by his purse, the wants of this, the best of our early topographers. We regret to find it otherwise, for though the grateful author

acknowledges that through his lordship he had "obtained gracious pass and privilege for his intended labours,—the description of famous England;" yet munificence was not a Hatton virtue, and the poor and pious author has only to *hope* for his "gratious assistance," rendered doubly needful by "long sickness and other impediments." It was that deferred hope which brings to the heart such spirit-sinking sickness.

That he was one of those who had to labour on through that most subduing of all efforts—mental exertion amid poverty and ill-health—admits of no doubt. Yet we find no other symptoms of suffering than at one time dating his writings "from my poor house at Fulham," and at another time from "my poor house at Hendon;" and that in his dying days he sought relief for his penury, as well as consolation to a wounded spirit, in the publication of such works as his *Pathway to Patience in all Manner of Afflictions*, and *The Husband's Christian Counsel to his Wife and Children left Poor after his death*. These works are rare, and have not fallen in our way; but we have now before us his *Poor Man's Rest*, one of the most exquisite gems of piety we ever perused, and which upholds the rest promised in the 29th verse of the 11th chapter of St. Matthew, in opposition to that rest, or ease, the rich fool called upon his soul to enjoy. This little volume seems to have been the pet of his old age; and of the high esteem in which his contemporaries held it, we may judge from the fact, that though published first in 1620, yet, in 1631, its title page states it to be "now the twelfth time augmented, and much reformed by the author."

If ever there was a man who deserved a first place in the institution re-endowed by William of Wickham, Norden was the man. That charity, situated near Winchester, received from Wickham the elevated title of "The Alms House of Noble Poverty." Dr. Lowth thought that by this was intended an asylum for the relief of decayed gentlemen. Even under that restriction Norden might have claimed to repose there; but we take it that, by "Noble Poverty," the endower intended a poverty unmerited by extravagance or idleness, and borne with resignation. Such was exemplified by John Norden, and he who thus conducts himself does, indeed, stand high in the nobility of our nature.

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-four years, the average highest and lowest temperatures of these days are 66.3° and 45.6° respectively. The greatest heat, 81°, occurred on the 24th, in 1842, and the lowest cold, 28°, on the 19th, in 1840. During the period, 89 days were fine, and on 79 rain fell.

RETURNING to the consideration of the food obtained by a plant from the soil by the agency of its roots, and somewhat in connection with what Mr. Fish says to-day, we find that silica, or the pure substance of flint, is present in all soils; is soluble in water, requiring one thousand times its weight of this liquid to dissolve it (*Kirwan's Mineralogy*, vol. i., p. 10); is found in many plants, and in all the grasses that have been analysed. Alumina, or the basis of clay, present in all soils, is so soluble in water as to be inseparable by the filter, and is much more so when any of the acids are present (*Sennebier's Physiolog. Veget.*, vol. iii., p. 18); it is found in plants in minute quantities, especially in the grain of barley, oats, wheat, &c. (*Schröder, in Gehlen's Journ.*, vol. iii., p. 525). Lime is found in almost all soils; it is easily soluble in water, and there is but one plant that is known to contain none of it as a constituent, the *Salsola Soda* (*Ann. de Chimie*, vol. xviii., p. 76). Magnesia, generally present in soils, is soluble in water, and is found in many plants. Iron is present in all soils, in all natural waters, and in all plants. Manganese is found in some soils, is soluble in water containing acids, &c., and is found in a few plants. But none of these in a state of purity, either simply or combined, have ever been found capable of perfecting a plant through all its stages of growth, when

moistened with distilled water; the contrary was the case, however, when the water contained in solution vegetable or animal matters, as the dung of animals. Now these matters contain carbon, hydrogen, oxygen, nitrogen, and various salts: the three first are absolutely necessary for the existence of all plants, every part of these is composed of them; nitrogen is found in most plants; and the importance of salts to vegetation is demonstrated by the facts, that clover will not flourish where there is no sulphate of lime; that nettles follow the footsteps of man for the nitrate of potass (saltpetre), which always abounds near the walls of his habitation; and that marine plants linger for the common salt of their native haunts. Salts of some kind or other are found in every species of plant, but none of which the constituents have not also been detected in soils. During decay, vegetable and animal matters exhale various gases. Carbonic acid, hydrogen, carburetted hydrogen, ammonia, &c., are of the number, all of which have been applied to the roots of plants with great benefit by Sir H. Davy and others.

Although plants will not grow upon soils composed of the earths only, yet these have a great influence over those plants, not merely by their secondary powers of regulating the amount of moisture, heat, &c., but by entering directly into the constitution of the plant;

for it is a result of experience, to which we know of no exception, that a plant contains more of any given earth if grown in a soil where it predominates, than if grown in a soil where it is in less profusion. This fact was pointed out by Saussure, who found that the *Rhododendron ferrugineum*, when growing on the calcareous formation of Mount Java, contained in its ashes 43.25 per cent. of carbonate of lime, but only 0.75 of silica. On the other hand, the ashes of the same plant, from the granitic district of Mount Brevere, contained 2.0 per cent. of silica, but only 16.75 of carbonate of lime.

However varying in the proportions, yet every soil is composed of silica, alumina, lime, magnesia, oxide of iron, salts, and animal and vegetable remains. The most important consideration is, what proportions those are which constitute a fertile soil.

The *beau idéal* of a fertile soil is one which contains such a proportion of decomposing matter, as to keep the crop growing upon it always supplied with food in a state fit for intromission, yet not so superabundantly as to render the plants too luxuriant, if the object in view is the production of seed: but for the production of those plants whose foliage is the part in request, as spinach, or the production of edible bulbous roots, as onions, which have a small expanse of leaves, so as to be almost entirely dependent upon the soil for nourishment, there can scarcely be an excess of decomposed matter presented to their roots. Spinach, on rich soils, will yield successive cuttings; the same with asparagus; the latter, especially, demands abundant applications of nourishment to its roots; since, like the onion, it has little foliage and slightly fibrous roots, at the same time that, like the spinach, it has to afford repeated cuttings, which, requiring a repeated development of parts, need abundant food, and that in the immediate neighbourhood.

A soil with a just proportion of decomposing matter, which insures that it will be capable of absorbing moisture during the droughts of summer from the atmosphere, as the most fertile soils are always the most absorbent, yet it must not be too retentive of moisture, which is the case in such soils as contain too much alumina; neither must it too easily part with it, which is a characteristic of those which contain an excess of silica. A subsoil of gravel mixed with clay is the best, if not abounding in oxide of iron, for clay alone retains the moisture on the arable surface in too great an excess; and sand, on the contrary, carries it away too rapidly. It is, however, evident, that to insure these desiderata in any soil, at all seasons, is impossible; and it is as manifest that a soil that would do so in one climate would fail in another, if the mean annual temperature of them should differ, as well as the amount in inches, of rain which falls during the same period. Since, in the western parts of England, more than twice as much rain occurs as in the most eastern counties, or in the proportion of 42 to 19, a soil in the east of England, for any given crop, may be richer and more tenacious than the one required for it on the western coast.

Alumina, or clay, imparts tenacity to a soil when applied; *silica*, or sand, diminishes that power; whilst *chalk* and *lime* have an intermediate effect, rendering heavy soils more friable and light soils more retentive. These simple facts are important; two neighbouring fields, by an interchange of soils, being often rendered fertile, which, before, were unproductive, from being in the extremes of heaviness and lightness.

From these statements it is evident, that no universal standard, or recipe, can be given for the formation of a fertile soil, but one, the constituents of which approach in their proportions to those of the following one, cannot be unproductive in any climate. It is a rich alluvial soil, which Mr. Sinclair, in his invaluable *Hortus Gramineus Woburnensis*, gives as being the most fertile for the grasses.

Fine sand, 115; aluminous stones, 70; carbonate of lime, 23; decomposing animal and vegetable matter, 34; silica, 100; alumina, 28; oxide of iron, 13; sulphate of lime, 2; soluble, vegetable, and saline matter, 7; loss, 8, total, 400.

We have already stated what constitutes a fertile soil; it may be added, that, to constitute one eminently such, a large proportion of its earthy particles must be in a minute state of division, and the more minute, the more fertile it will be. In the above analysis, 185 parts only were separable by sifting through a fine sieve, 215 parts were impalpable; whereas poorer soils will often have 300 parts coarse matter to every 100 of finely pulverized constituents.

In affording warmth to plants, the earth is of considerable importance, and the power of accumulating and retaining it varies as much in soils as the proportions of their constituents. Sir Humphrey Davy found that a rich black soil, containing one-fourth of vegetable matter, had its temperature increased in an hour from 65° to 88° by exposure to the sunshine, whilst a chalky soil was heated only to 69° under similar circumstances; but the first, when removed into the shade, cooled in half-an-hour 15°, whereas the latter lost only 4°. This explains why the crops on light-coloured tenacious soils are, in general, so much more backward in spring, but are retained longer in verdure during autumn, than those on black, light soils; the latter attain a genial warmth the more readily, but part with it with equal speed.

Different plants affect different soils. Every gardener must have observed that there is scarcely a kitchen-garden but has some particular crop which it sustains in luxuriance far superior to any other garden in its neighbourhood, or to any other crop that can be grown on it. A garden we once cultivated, without the preparation of an artificial soil, would not produce the common garden cress (*Lepidium sativum*), whilst the raspberry was remarkably luxuriant. That the composition of a soil has a main influence in these peculiarities is certain.

GARDENING GOSSIP.

WE insert the following from a correspondent, with our reporter's reply:—

"NATIONAL FLORICULTURAL SOCIETY.—I fear your gossiping correspondent is not free from the common failings of his class, and in his desire to supply gossip does not always adhere strictly to the truth; at least, in relation to the National Floricultural Society, he has said many things which have not the semblance of truth about them. To take the most recent case, at p. 351, he says, 'The rapidity with which things (flowers) are removed after the award is made gives every appearance of a disposition to avoid publicity instead of courting it;' meaning, I presume, that the managers of the Society are afraid to have their proceedings criticised. Now the simple truth of the matter is this, the doors are thrown open to representatives of the press half-an-hour before the public are admitted, and after the chairman for the day leaves the chair, the productions are left on view for one hour. Thus your correspondent may view the flowers for two clear hours, if he pleases; but if he does not please, the fault is *his*, not *ours*.

"Again, he appears quite determined not to understand the awards, and jumbles 'first-class certificates,' 'certificates,' and 'commendations,' together in most unenviable confusion. Allow me, therefore, to remark, for the information of your readers, that the Society makes the following awards:—

"'First-class certificates' to all such plants or flowers as are considered by the censors to be first-rate and distinct; 'certificates' to what may be called good, but not first-rate flowers; and 'commendations,' to such things which, though they may be deficient in 'properties,' as understood by florists, may still be very brilliant and showy, and hence are desirable market flowers. These awards, I can safely say, are never made without due deliberation; and, as a regular attendant at the meetings, I am quite sure if the censors err at all, it is on the side of illiberality. For my own part, I should like to see the commendations much more liberally bestowed than they have hitherto been. That the National Floricultural Society should have the goodwill of all is not to be expected; and that private pique, jealousy, and uncharitableness, should sometimes find vent is quite in the nature of things. Let me, however, advise your correspondent to speak the truth, and fear not, and not find fault with awards to flowers which he *never saw*, and at meetings which he *never attended*; for I am quite sure he did not attend the meeting reported at p. 151, and I am equally sure that he was not present on Thursday last, Sept. 4th.

"INDEX."

Our reporter says:—

"On Thursday, the 4th, I attended the National Society at half-past three. My friend and assistant had been there and left, and there was but one man in the room, who said the things had been packed and gone half-an-hour. I went to the place generally resorted to for refreshments, in hopes of seeing some of the members. There was, however, but one there, who said he had been there half-an-hour, waiting to see some, as they agreed to meet him at the usual place. I observed that at 'the National' they removed flowers immediately, as if to prevent anybody questioning their judgment. He observed that they were moving them before he came away, and he perfectly agreed with me in saying that it was absurd to deprive the public of the opportunity of seeing novelties, sent, perhaps, a good many miles for the very purpose of being seen. All articles are to be sent two hours before the meeting, but the public have only, according to the showing of the managers, one hour to see them in, although the judges have their two hours uninterrupted; and the public, if they have all they are allowed, have but one hour, and certainly impede one another; but I declare there has not been half-an-hour any one time I have been there, before some one or other has begun to pack up, an example soon followed by others."

[We will only add to what our reporter says, that this hurrying away of the flowers exhibited is injudicious, for it raises suspicions against the awards; and a

society should do nothing to justify even a suspicion on such a point.—ED. C. G.]

There is a threat in some floral circles of establishing a Society upon the plan of the old *Society of Amateur Florists*, held under the presidency of Mr. J. Goldham so many years, but upon an extensive scale, and to which it has been suggested none but amateurs should be admitted. The object of that Society was to help one another to lessen the expenses of a garden. Had we been present when the suggestion about amateurs was made, we should have told them to lay aside any such project. Bearing in mind Punch's "Advice to persons about to marry," we should have given the same to persons about to join the Society—"Don't."

First, there is the insuperable difficulty of deciding who are amateurs, and who are dealers, or what exact amount of dealing would shut a man out; secondly, it is the mixture of dealers and amateurs at meetings that in reality promotes the science; thirdly, everything of an exclusive character fails to do good, if it does not fail to exist at all very long. We are of opinion that a revival of the old Amateur Florists' Society, with its monthly meeting for social purposes, would be of great service. They always had an economical dinner, and an evening's unrestrained conversation upon gardening subjects. We would not compel anybody to be present, nor fine them for absence, but we would render it imperative to make it known to the secretary what they intended to do, or he would never know how to arrange. Nor would we confine the dinners to one locality, but settle at one meeting where the next should be held. Again, we would unquestionably admit everybody who would conform to the rules. None but those who attended the Goldham dinners, for such we have heard them called, can form an idea of the pleasure derived from them; not at all cramped by formal business of any kind, but perfectly unrestrained. Many a useful lesson has been picked up at those meetings, which were, at the period we speak of, attended by the oldest florists and amateurs of the time—Davey, Clarke, Strong, Pinder, Slater, Baron, Bray, and others, who have left this busy world, were among the visitors; and for ourselves, we can say we learned some of our best lessons in floriculture, and gathered from them much valuable information. We trust all thoughts of exclusiveness will be abandoned—it is good for nobody, and very bad for science.

Hollyhock growers are reminded that, whatever may be the colour, flimsiness of petal is a fault not endurable, and the reverse of this, stoutness or thickness of petal, is a valuable acquisition, even without another redeeming point. This was the first good point achieved by Mr. Baron, of Saffron Walden.

In giving prizes or certificates for new varieties, nothing should save a thin flower from condemnation but a decided new and desirable colour, and even this only for the purpose of seeding; flimsiness is the bane of all flowers; but having now got a good substance in some varieties of the *Hollyhock*, we need not despair of obtaining it in the *Petunia*, which is a weedy thing at present, and does not seem much inclined to be otherwise.

In revising the *Schedules for next year's Shows*, some, and it is desirable that all, Societies will be very distinct in the printed conditions of showing; first, to state the points of excellence to be regarded; secondly, to limit the size of pots for general competition; thirdly, to give prizes which the greatest number of showers can compete for; fourthly, to give prizes that will produce the greatest effect; fifthly, to allow a good deal more to be given, at the discretion of the judges, for specimen plants, which should be encouraged, because hundreds can show a single plant that cannot show collections;

but where there is but one prize, it is hopeless. All these things will occupy the attention of the committees.

The *Newbury Horticultural Society*, whose meeting so recently took place in the grounds of Mr. Graham, adjoining the railroad station, has made a considerable advance in the short space of only one year; and the amateurs, as well as gentlemen's gardeners, could give some of our metropolitan exhibitors a good lesson on *Fuchsia* growing. Many very splendid plants, of large size, were exhibited without support, and were well furnished and bloomed from top to bottom.

Balsams, well-grown, were shown in abundance, and some *Petunias*, in pots, were beautiful. *Roses* were creditably exhibited in all the classes. *Asters*, of extraordinary size and beauty, were in profusion. But the most gratifying part of the show was the *Cottagers' Tent*. Useful vegetables were plentiful, and vied with the best productions of the professional gardeners; and it was painful to see a vast number of industrious people contending for so few prizes, and, consequently, so many going unrewarded; but this arose from the vast increase in the number of competitors since the schedule of prizes was drawn up, and which was, at the time, supposed to be equal to the probable number of showmen. Many extra prizes were, however, awarded, and the case will be met by a corresponding increase in the rewards for next year. *Dahlias* were an important feature. Mr. Turner, of Slough, was the first; Mr. Keynes, of Salisbury, second; and Mr. Black, of Clewer, third. In the open class, Mr. Perry, of Birmingham, won the principal amateur prize with twelve fine flowers, in which Morgan's *King of the Dahlias* was conspicuous as a model of splendid form. Mr. Turner received a certificate for a lakey purple, called *Plantagenet*, and Mr. Keynes, one for *Laura Lavington*, a dull-coloured fancy flower, very novel, and another for *Triumphant*, a red, approaching scarlet. Mr. Perry showed a beautiful seedling, too small for general exhibition, but good enough to make us wish for a class of small varieties. Mr. Smallbone showed six blooms of the *King*, cut from one plant. We cannot but rejoice in the advancement made, at country shows, in the exhibition of plants without sticks or other supports; although there was, at Newbury, one shown, of *Balsams*, grown on the contrary plan. The leading shoot had been taken away, and all the side shoots tied to sticks, destroying the entire beauty of the plant. The committee, however, left them to the mercy of the judges, who placed them behind, in spite of their very fine blooms.

We are right glad to see that the Horticultural Society have, in their schedule for 1852, officially denounced the un-gardener-like practice of adopting *Props and Ties to Plants* capable of sustaining themselves, and that in future the judges' attention is to be particularly directed to that point. Every gardener knows that the discreditable practice, so detrimental to the appearance of the *Roses*, *Heaths*, *Geraniums*, and many other plants, has been denounced by one writer for years, although alone in his condemnation. If, however, the leading dealers in *Roses* and *Geraniums* cannot grow plants capable of sustaining themselves, and yet pretend to teach others how to grow them, we need not wonder at the amateurs following the bad example.

We have the highest respect for the motives with which the dealers in particular flowers and plants give *Prizes for particular Subjects* at horticultural shows; but long experience has enabled us to decide, after mature consideration, that such gifts, so given, fail to afford either benefit to the Societies, or advantage to the science.

Societies should comprise in their schedules all that is

desirable. If dealers determine to encourage a flower, let them give the committee as much as they please to enhance the number and amount of prizes in the classes considered to be necessary. But when they give prizes to form separate classes, they increase the business, or, rather the labour, of the officers, divide the attention of the exhibitors, put it in the power of large growers and prize-hunters to make a more general sweep, render the arrangement of the productions more intricate, and the duty of the judges more difficult. We beg those gentlemen who have been the most generous to look back upon the result of all they have done. We will venture to say they can trace no direct benefit from their liberality; they will find that there has rarely been any real competition for the prizes. They have been generally won by those who already swamp the small growers, and, of their abundance, set up everything they can to grasp at rewards, given with the best intentions to encourage young beginners, or, at least, limited growers. Suppose a Society devotes five pounds to any flower—say that the prizes offered shall be 50s., 30s., 15s., and 5s.—a grower gives two or three pounds for another class of the same flower, the man who wins the fifty shilling prize in one will win the best prize in the other; but if he gives a forty shilling prize to go between the fifty and the thirty shilling prize, and a twenty-five and a twenty shilling prize to go between the thirty and fifteen, he opens a wider field for young growers, without adding to the gains of the two or three leviathans.

NEW PLANTS.

THEIR PORTRAITS AND BIOGRAPHIES.



DROOPING-FLOWERED, or BOX-LEAVED CANTUA (*Cantua dependens*, or *buxifolia*).—*Botanical Magazine*, t. 4582.—This beautiful acquisition to our half-hardy plants has been already noticed in *THE COTTAGE GARDENER*, by Mr. Beaton, but the first account we have of it in our own language is by Dr. Lindley, in his report of a meeting of the Horticultural Society, held on the 15th of last April (*Gard. Chron.*, 247). "Messrs. Veitch

produced a great acquisition in the shape of *Cantua dependens*, a free-flowering, half-hardy shrub, from Peru, whose introduction to this country has long been a desideratum. Owing to the accounts which had been published of the great beauty of this plant in its native country, much had been expected from it, and it is satisfactory to be able to state that the highest expectations formed of it are likely to be fully realised; for it not only promises to be one of the most charming, but also one of the most useful shrubs that has been introduced to our gardens for years. When it is stated that the flowers are more than twice the size, and far more brilliantly coloured, than those of the two-coloured *Cantua*, some idea of the beauty of a well-bloomed specimen will be obtained; and then it possesses this value, that it is not only a plant suited for the gardens of the wealthy, but also for those of the cottager, where it will be just as much at home as the Fuchsia, requiring, as it does, about the same kind of treatment." In the account of the May exhibition of the Horticultural Society, we find, from the same authority, that among the "interesting novelties" the "Messrs. Veitch had their lovely *Cantua dependens*."

The genus *Cantua* was named by the elder Jussieu, about sixty years ago, from *Cantu*, the Peruvian name. Ten years afterwards, the authors of the *Flora Peruviana*, not aware of the name having been published already, re-named it, and called this species *dependens*; but their generic name, *Periphragmos*, has given way to the elder one, *Cantua*; and their name of the species, we fear, must also succumb to that of *buxifolia*, an irreconcilable one given by Lamarck six or seven years previously, although we find Persoon in 1806, and Dr. Lindley, as above, in 1851, attempting to establish the more appropriate name fixed on by Ruiz and Pavon. It will rest with the public whether *dependens* or *buxifolia* is to be the current name, and the latter will probably prevail. It is adopted by Sir W. Hooker and Dr. Lindley. *Cantua* belongs to the Nat. ord., *Phloxworts* [Polemoniaceæ], and to the first order of the fifth class in the system of Linnæus, *Pentandria Monogynia*.

Cantua buxifolia is a downy branched shrub; leaves not at all like those of the Box, except in colour, though part of them are acutely pointed oblong oval, but others are like those of the ivy—sometimes with smooth edges, but sometimes notched—sometimes downy, but as often smooth. Flowers, scarlet and yellow, or scarlet and white, rosy within, and crimson whilst in the bud state; calyx, five-toothed, tubular, striped with dark green; corolla, five-lobed, shaped like that of the Cowslip, but longer tubed, the flowers, which open in May, being four inches long; the stamens show well, having purple anthers; the stigma is three-cleft. It is a native of the Peruvian Andes, whence it was introduced by Messrs. Veitch, of Exeter, in 1850.

LOWLY-GROWING PLEIONE (*Pleione humilis*).—*Paxton's Flower Garden*, ii. 65.—This is a genus of orchids founded on the present species some years ago by the late Mr. David Don, and, we believe, from a dried specimen. Dr. Wallich called it *Gomphostylis*, and it is the *Epidendrum humile*, and *Cymbidium humile*, of Smith. Dr. Lindley once named it *Cælogyne humilis*, but he has seen reasons to alter his opinion, and now he describes it in the work referred to, adopting the true name given by Mr. Don.

Pleione, after whom this orchid is called, was the reverse of humble; she was a gay dame of poetic romance, a flying goddess; and one of the mythological tales about her makes her and Atlas the parents of the seven sisters who were transformed into the "seven stars," the Pleiades, in the

constellation Taurus. Our young readers will find the question, How many stars are in the "seven stars?" one of



the most simple problems in astronomy, but difficult to solve; some say five, some six, and astronomers are not yet agreed about the fate of the seventh. We introduce this subject to point out to the young an easy way of remembering hard names in natural history, by first associating such names with objects or ideas already familiar to the mind: thus, the "seven stars" are the Pleiades, whose fabled mother was Pleione, a name in gardening, applied to a pretty little Indian orchid, from the Kasijah Hills, in Northern India, as high up as some seven thousand feet above the level of the sea, where the indefatigable Mr. Lobb met with it, during his botanical rambles, and whence he sent it over to his patrons, the Messrs. Veitch, nurserymen at Exeter, who are so expert in the growth of such curious plants as to enable them to run away with half the prizes offered at the great London competitions. Upon the proper cultivation of so great a little stranger we must let Mr. Appleby speak. The sepals and petals are white, and the lip white, spotted closely with red, and barred with purple. B. J.

THE FRUIT-GARDEN.

TRANSPLANTING FRUIT-TREES.—It now becomes a duty on our part to sound a premonitory note as to this part of fruit culture. There is nothing like *early autumn-planting*, the reasons for which will be found in preceding papers on root-pruning, &c., for one great principle lies at the bottom of all these proceedings. There is no occasion, however, to ride this hobby hard; and we do not mean that the moment our advice becomes "gude black print," as Burns said, that the operator must transplant forthwith. Now very young trees, as everybody knows, may be transplanted almost at any time; but not so with trees of considerable size; and as many persons are frequently necessitated to disturb, or remove, trees of many years standing, to make way for alterations, or in the event of a removal of residence, it becomes a point so to remove them, that as little time may be lost as possible. In pursuance of these objects, then, we must here point to a previous root-pruning as one of the great essentials. There is no occasion to take nature much by surprise in this matter; these things may be so managed, that a whole twelvemonth may be saved in point of returns, and very much injury averted as to the permanency of the tree.

We have before observed, that trees of considerable size are particularly liable to become the prey of insects the season after planting. This arises from the extensive disruption of the roots, which is, of course, the more prejudicial to a fruit-tree in proportion to its bulk and age. The fact is, we suppose, that the vital action may be presumed to decrease in proportion as the stem becomes older wood; or, to say the least, it may be fairly supposed that the ascending sap meets with more

obstructions. In a young tree the proportion of what is technically termed "sap-wood," is immense, and the fluids must ascend with a freedom very different to that of aged trees. Hence a greater amount of self-restoring power,—hence a less amount of suffering,—and hence more innate energy, to withstand the attacks of insect tribes, which, it is well known, much more readily attach themselves to delicate subjects than those which are robust, and for pretty obvious reasons.

Any one, then, having trees of some age, or bulk, to remove during the ensuing rest-season, will do well to open a trench around the trees immediately, unless such trees have a crop of fruit on them of any great consequence. The trees will flag slightly, perhaps, but this is of no consequence; in many cases, a positive advantage, as tending to a more fruitful ripening of the wood. This trench must be opened precisely at the point where the operation would be performed in the ordinary process of removal, and it may remain open until the tree is to be removed, which may be in the very end of October. The excavation must be as deep as any side-root extends, or a little deeper, and every root cut away, paring the ends with a sharp knife, and taking care to cut just where a tuft of fibres exists. This we consider important, for it is a long time before thick roots in naked parts emit such fibres, and some, if of much age, scarcely ever; the sure consequence of which is a decay, if not a positive disease in the part, which, doubtless, has a tendency to extend upwards, and, perhaps, to corrupt the juices of the tree. This done, we advise, as a compensation, a liberal watering of liquid-manure; and, indeed, it will be good practice to apply several inches in depth of half-decayed manure. This will serve a double purpose,—that of inducing the formation of surface fibres, and of arresting the departure of the accumulated ground heat.

It is well known that the earth begins, at a certain period, to repay the heat it had accumulated from the air, and although this does not commence in a fixed way at any precise period, yet we think that after the middle of August a gradual decrease may be counted on. Of course, if it be possible to arrest this ground-heat, the proceeding will be in favour of a speedy granulation of the wounded parts, and if this does not produce a fresh net-work of autumnal fibres, it will, at least, throw the roots in a position to produce them early in the spring. The surface-fibres, moreover, beneath the coating of mulch, will be by no means inactive; here thousands of mouths will be excited, and, we may as well add, thousands created.

Thus may every tree that has to be removed be served, for even the small ones will be benefited by it. In the meantime, proper preparations may be made for the reception of the tree; holes may in a few weeks be excavated, and a substratum of hard material provided. The procuring of soils may at once proceed, according to former advice, which we need not repeat here.

Whilst on this topic we may as well advert once more to autumn root-pruning, in order to facilitate the ripening of the wood, and tame undue luxuriance in gross trees. It has before been observed, that this proceeding, the preparation of trees for transplanting, and the putting out cuttings of various fruits, all proceed on a close identity of principles, *viz.*, the promotion of the solidification of the wood, termed "ripening," or the excitement of a granular process betimes, paving the way to abundance of early fibres.

In the next place, we beg to remind our readers that by the time these observations become print, it will be time to commence *Fig stopping*; the reasons for this have been stated repeatedly; but, like other repetitions which we feel obliged to submit to, this may have its use as a reminder. Besides, as THE COTTAGE GARDENER is not always confined to the same set of readers,

and the fresh recruits may not have access to the earlier numbers, it becomes a duty so to do. The fig, as is well known, is not indigenous to Britain, it comes from warmer and more cloudless climes. Our summers, therefore, are not long enough to enable the tree to complete its elaboration; much of the later growth is, therefore, of so spongy a character as to have a tendency, in the ensuing spring, simply to enlarge the fabric of the tree. Now, this is by no means desirable; the tree is but too apt to over-reach its bounds. Besides, immature growths are not so hardy as those of a mature character, and the power of enduring a hard frost is at all times a consideration. Now, by a timely stopping of the points of the young shoots, especially such as are robust in character, both purposes are effected, and, in addition, the points of many of the shoots become studded with embryo fruits, which being decidedly organised as such, and placed beyond the reach of any metamorphosis, are just of the kind to produce an early crop in the ensuing year. The stopping consists in merely pinching or squeezing the extreme points of the shoots, and with regard to most kinds this may be done very early in September. At the same time, all late or succulent growths should be stripped clear away, in order to let the sun shine on the fruitful shoots. No practice is worse than allowing such shoots to be shaded by their rampant neighbours; indeed, the solar light must now be brought to bear on every leaf of the shoots to be relied on, and the wall must be allowed to become heated by the immediate action of the sun. By such means, and such only, can the thorough maturity of the fig be carried out. Exceptions there are, we are aware; very hot summers may save the operator this trouble, and in our more southern counties, such as Sussex, nothing of the kind is needed: we, however, have to shape our remarks for the United Kingdom.

R. ERRINGTON.

THE FLOWER-GARDEN.

A Geranium Wall.—When I sat down to write my last week's letter, I had no intention of broaching the subject about sheltered walls to grow the different sorts of summer-flowering geraniums against, but two or three other projects were striving for the mastery at the same time, and this fancy had the best of it, so out with it I must, although in doing so I may have done injustice to it for want of a good explanatory introduction or preface. Some may suppose that the subject occurred to me only at the moment, and that, without much consideration I let it loose for a chance shot; but that is certainly not the case. I have thought of it over and over again for these six years back; I have also explained it to others, in conversation, and among the rest, to the Honourable Lady Middleton, who highly approves of it; indeed, I never met with any one who did not agree with me that such a wall might be made one of the most beautiful and novel features in a flower-garden.

There were several specimens of geraniums trained against a large conservatory wall here, which were planted from time to time to fill the bottom of the wall, or the sides of some of the panels or divisions of the wall, while the more permanent plants were too young to cover the spaces intended for them; and some of these geraniums still remain, although not done justice to, as they are looked on as temporary helps only, although they have assumed a character which puts it beyond all doubt, that if a good border were made for them, and planted with nothing else but geraniums, a scene might be got up at once most gay, most interesting, and, withal, a very marked novelty. Besides, for many years, and until Mr. Barry came and knocked down the old terrace walls about the mansion, to get in more

fanciful walls after his own craft, against which he would consider it madness in any one to attempt any floral decorations, we used to have *geraniums*, *petunias*, and *verbenas* trained against the old terrace walls, which averaged from five to seven feet in height. They looked better than those in the beds, and of all the plants I ever saw trained that way—with the exception of *Habrothamnus fasciculatus*, the then new petunia—*Shrubland rose* was the most beautiful, and for three years running I never knew a party pass through the garden without standing in front of that plant; but at last I found it necessary to do away with it, because no one would look at the beautiful beds of it in other parts of the ground after seeing the one against the wall, and I was then very desirous to get it out, as a good bedder, all over the country, in opposition to the stupid, *flippy-flappy* sorts of seedlings with which the florists had well nigh choaked us, and to this day a better bedding petunia of that colour has not appeared. One may see it now at the Royal Gardens at Kew, and all the other public gardens about London, as a standing dish, and so also with the large *white petunia*, which I first sent to London; but white petunias are too common-looking for a wall.

Then, as to *Fuchsias*: after testing them for five or six years against these walls, I am convinced that there is no other mode half so good for making the best of them, also; and now I can hardly reconcile myself to the best bed of fuchsias in the country; though the white varieties of fuchsias, as far as I could make out, are not much improved in looks against bricks, either red or white. After these, all the best scarlet and pink verbenas are the next class of plants that I should pride myself in being the means of getting introduced as training plants against low and cheap-made fences, to be secured from frosts, and go on growing from year to year.

Now I hope all this will suffice to convince the reader that the thing is not a fanciful theory, but founded on actual practice, and a good deal of consideration, together with the opinions of hundreds who had seen all this. We have now four families of the most popular flower-garden plants to choose from, and it will be strange if we do not raise a spirit through the country which will not rest at ease until a fair trial is given to my hobby. There is a fifth family, the shrubby *calceolaria*, which I am quite sure would pay, well treated after the same manner, but not having tried them with my own hands that way, I shall not urge their merits too confidently. I recollect, many years since, having seen a very fine specimen of the *Calceolaria viscosissima* trained against a wall, in the Botanic Garden at Birmingham, and I believe the plant made its first appearance in that garden with my much valued friend, Mr. Cameron, the late Curator. If we admit the *Calceolaria* among our trainers, this *viscosissima* must be the first of them to plant, and the next *bicolor*,—not the *bicolors* of the florists, for they have made a mess of them, by running them all into one strain, but the true wild bicolor of botanists. The third best is an English seedling, called *Corymbosa*, the best of all for very large beds, and, perhaps, the second best for a wall, but that is a matter of taste; the fourth would probably be the *Kentish Hero*, and this perhaps the very first with some. Those who have only seen this *Calceolaria* in beds, and not much higher than two feet or so, may doubt the possibility of getting it up to seven or eight feet high, but if the *Ibrahim Pacha Geranium* can be got up to five or six feet in two or three years, which I know it can, for I have seen it so, surely it will not be thought beyond our art and mystery to get up the *Kentish Hero* to ten feet, if needs be; but seven feet is the highest point I would aim at with any of those I have named, indeed, I do not think they

would look any the better for being farther from the eye; besides, my plan contemplates the border for all these things to be raised one foot above the surrounding surface, and that helps them away from the eye. Now, if I could suppose that one reader out of the forty thousand who peruse this COTTAGE GARDENER, would object to seeing any of the families treated as I propose, I would cancel the whole story at once, and yet I would have a six or seven feet high wall or fence, and a raised border, and plant the whole with a selection of tea-scented roses, and nothing else, and over them a glass covering, after the manner of Mr. Rivers' orchard houses. Here, then, I am on a level ground with Mr. Rivers at last, and I must say that his pamphlet on these orchard houses is the best idea on gardening in my time—of course, this idea of mine is the next best, and if I do but succeed with it half so well as he has already done, I shall be satisfied; although it is very likely he will not thank me for this letter, for it is ten to one if he is not now engaged on another pamphlet about rose-houses, and if so, my rose walls and borders will beat him out-and-out, for I would clear away all the glass, or other covering, by the end of May, and put them by till the end of October; then summer visitors would be put off the scent, as to the mode by which I had succeeded in managing the Tea-roses, better than all the gardeners put together. *Geraniums*, *Petunias*, *Fuchsias*, *Verbenas*, *Calceolarias*, and *Tea-scented Roses*, without anything besides, would make a very gay scene all the season through; and when they come to be established permanently on a low wall, few can form an idea, now, of the character they would assume after two or three years of growth in a good and suitable border. The whole of them, fortunately, will succeed in the same kind of soil, or border, only that the Tea-roses would need more dung, or, at least, some dung, for I would allow no dung for the other plants, if I could get a good light turfy loam, with a sixth part of rotten leaves. Indeed, Mr. Errington would be my guide in this part of the plan: such a border as he would make for a house of *Muscat* grapes would be the very thing for the new borders, drainage and all; every one of our readers knows his depth and compost, and that will do for me. Four feet is my width for the border, but it may be a little more or less, according to circumstances; and, unless the bottom is naturally very dry, such as over chalk, gravel, or very sandy soil, the surface ought to be a foot or so above the general level; and for an edging to keep up the soil, slate is the best and cheapest in the long run; but any wood that will stand the weather would do, painted stone-colour, and dusted with white sand while the paint was wet—this would look like a stone border. Then, to cover the border, we must borrow a leaf out of Mr. Rivers' book on orchard-houses; but there will be no cause for borrowing it, for I believe every one who loves a garden has read it already, and that saves me some writing. Any one who has seen a cold pit covered will be at no loss to know how this part is managed: the back of a cold pit represents my walls; the inside of the pit answers for the border; rafters and lights in the usual way will do, with or without a little glass in the upright front. For the last eight winters I have kept from ten to twelve thousand geraniums safe from frost in cold pits, without a particle of artificial heat, or any means of applying it; but I am quite certain that a double row of two-inch pipes along the front of the pits, and a little common back-house boiler at one end, would be a great deal the cheapest, and that is the way I would serve these new walls and borders—the pipes and boiler would be removeable of course.

D. BEATON.

GREENHOUSE AND WINDOW GARDENING.

Potting.—This subject has frequently been alluded to, but the enquiries of a correspondent, a week or two ago, the enquiries of visitors, as well as my own observations, have more than convinced me that the subject is far from being exhausted. The knowledge that this work is extensively read by gardeners, and even by those at the head of the profession, gives a greater ease to the pen of those who generally write for its pages; but this very advantage, unless care be exercised, is apt to be more than counterbalanced by not descending sufficiently into the minutiae of matters, so as to suit the case of those whose enthusiasm needs fanning and encouraging, instead of meeting it with statements and propositions, which appear to them as great an enigma as a chapter written in the Arabic or Hebrew would appear to the uninitiated. At the present day it is hardly possible for a gardener to be visited by ladies in comfortable circumstances in society, without having questions put to him repeatedly, involving the very first principles of plant culture; and if he happens to look in upon the snug homes of these lovers of floral beauty, he will be more than ever convinced that, notwithstanding all they have read upon gardening, and the standard and periodical works that grace the shelves of their cosy parlours, the matter has never yet been so simplified as to be thoroughly understood by the masses, who, nevertheless, love flowers and gardening with an intensity that could not be exceeded, were it not for the subduing influence of the disappointments which they often suffer. Referring to other articles on potting, for general principles, it will be the aim of the present, further to simplify the answer given to H. G. B., page 362, respecting the soaking of pot plants, so as to remove the whole of the soil before repotting them again, disapproving as we do, of soaking soil and roots after potting, except in extreme cases.

1. The soaking of the ball of a hair-fine-rooted plant, grown in fibry peat, such as *Ericas* and *Epacrises*, so as to remove the whole of the soil from them, would be alike impracticable, and of little usefulness were it practicable, because such soil continues for a long period, when properly drained, to retain its nutritive properties; because the fibres are so fine and minute, and so interlaced, and have so run backwards and forwards from the centre to the circumference, and from the circumference to the centre, and have so taken hold of and passed through the lumpy, fibry parts, that it would be alike difficult to get them disentangled, even when gently agitating them in a pail of water, and to get them as regularly and nicely packed in the new soil as they were before; and because, that in the case of such plants regularly shifted, the removing of a little from the surface and the sides, and a fresh addition of from half-an-inch to an inch all round, will be sufficient to keep the plants one year, and frequently for several years, in a state of healthy existence. In all cases of potting such hard-wooded, fine-rooted plants, three things are necessary. First, that the old ball should be thoroughly wetted; for if this is not the case, the moisture from the watering-pot will escape by the looser soil on the sides of the old ball. Secondly, the roots round the outside should be gently disentangled with the point of a sharp-pointed stick, and a little of the old fine soil got rid of, as far as can be done with safety. No roots must be shaved off with the knife, as in the old style, when these fine roots were as ruthlessly dealt with as if they had been of equal value with the outside of a turnip. Now, let us just place these two conditions side by side. In ordinary circumstances, whether by watering, or by soaking in a pail, it will only be necessary, before this picking of the roots and ultimate potting, that the soil should be moist to

its centre; but if you know that the plant, from being long unpotted, has its roots densely matted, then it will be preferable to examine and relieve the roots when the soil is rather dry, as the smaller particles will thus be easier got rid of at a minimum of danger. But in such a case, as soon as this operation is over, the ball of the plant should be soaked in clean water, and always in a temperature a little higher than the atmosphere in which it is ultimately to grow; and when thoroughly soaked, placed on a stand, and allowed to part with all redundancy before potting. We have frequently alluded to the *consistence* of the soil, the *roughness* being proportionate to the size of the shift, and the young fibres so placed as to run into it easily and quickly. The third thing necessary is the character of the soil as respects *moisture*; it ought neither to be wet nor dry, but just the happy medium between the two. Hundreds of fine plants are first rendered sickly, and ultimately destroyed, by inattention to this very simple matter; and this fatality takes place, not only among our less initiated friends, but in the largest and finest places, because young men to whom the duty is entrusted consider such matters as too trifling to be attended to. The more I see, the more fully am I convinced of a principle often propounded by the late Mr. Stewart, of Valley Field—"Attention to trifles is inseparable from good gardening." Here is potting proceeding with compost brought from the open air, after heavy rains, full of moisture; which, dropped in round the ball of a plant, saying nothing of squeezing it down with the points of the fingers, will become a compact souring mass, and must be remedied by length of time, before roots can enter it so as to thrive. There, on the other hand, is a professional, thumping away with soil kept for months in a dry shed, and so *dry*, that it could be little more so, if dried in an oven. Down comes the common modicum of water, after the shifting is completed, and again the dose is repeated, *secundum artem*, when the surface again indicates dryness, and wonders are expressed as to what can be the reason of the sickly diseased aspect, until some fine day, turning the plant topsy turvy, the dusty condition of the lower, and many parts of the upper strata, sufficiently solves the mystery. The soil should just be in that condition that will permit of its slightly cohering when squeezed tightly in the hand; yet, not so much, but the letting it fall from six to ten inches will cause it easily to part asunder. In such a state, when put into a pot, and drainage, &c., properly attended to, the water from the water pail will be easily absorbed, and as freely parted with. A fourth matter we allude to, and that is, the not elevating such plants above the pots, but potting them so that the outside of the soil in the pot should be as high, if anything, higher, than the centre. This should be kept in mind in all fresh surfacings, &c. Raising such plants in the centre of a pot might have been all very well when a single crock or two was all the drainage thought of, and the soil, instead of being rough, could not be sifted fine enough; but it is decidedly injudicious, under the treatment mentioned in these pages, as the plants not only have a stilted appearance, but there is always a danger of the inside of the ball getting dried up, which is never the case when the soil next the sides of the pot is generally the highest. The plunging of such a plant in a tub of water after potting can only be tolerated as a slight amend for carelessness in previous watering, and securing the soil in a proper condition. Sprinklings on the foliage to prevent and lessen evaporation, and judicious waterings, when necessary, are more likely to be attended with pleasing results.

2. The previously-soaking system so as to remove all the soil, unless in the case of very large-rooting plants, would not answer well in the large, generally termed the one-shift, system, as everything here like a sudden check should be avoided. Saving part of the ball of a

young plant, and tracing out the remainder of the roots, and packing them in the new soil, are more likely to be attended with success; but whether soaked previously to repotting or not, the soaking after potting would, in the case of all rather tender things, be absolutely ruinous. The unoccupied soil, thus soaked with moisture, would become quite soured, and unfitted for the roots entering it when they reached it. In such circumstances, moistening the soil only so far as the roots extend, is the great source of success with large shifts.

3. The soaking of plants in water, so as to get rid of all the earth, answers extremely well in the case of all those bulbs and other plants (and more would answer than are generally tried) that, after being grown for a time in soil, may be removed to glasses, and bloomed in water. The plants with thick fleshy, and but few fibrous, roots, generally answer best for this purpose. By this means our friends with a cellar, or a dark room, may easily keep up a succession of flowers, from bulbs, in their windows in winter.

4. The same system would answer well in the case of all those Lilliputian miniature pot specimens, where two or three inches of sifted soil is all that is allowed for a plant to occupy. In such a case soaking before would be advisable, so as to have all the soil fresh; and soaking afterwards could do no great harm.

5. Plants cut down after blooming, allowed to break, and then repotted into smaller pots, to be again once or more shifted before they show their blooming buds, will often do well with this soaking-before-potting system. For instance: just now there is a nice *Pelargonium*, the young shoots of which, after being cut down, are nearly one inch in length. As it seems healthy, I should be satisfied with taking it to the potting shed, reducing the ball, after seeing it was previously moist enough, getting rid of a good portion of the old soil, saving all the best of the fibres and roots, removing only the dead and decaying, and transferring all to a pot of the same size, but more likely to one or two sizes less. But here, again, is a superior variety still, but not so healthy-looking, and it is even in a larger pot, and, instead of soaking, the soil seems too moist already. Take such a plant to the potting-bench, and, ten-to-one, the very weight of the water in the space unoccupied by roots and soil would cause the few best roots to be lacerated and destroyed. Take it carefully out of the pot, hold the whole with your two hands, and thus holding it, agitate it as our friend proposes in a tub of water; continue the agitation, and let your hands gradually approach the collar of the plant, until at length you have got nothing but the top and the few roots remaining. If the latter are very long and weak, you will act rightly in shortening them a little, but keeping the very best. Without twisting them greatly, pack them among light soil in a much smaller pot—the smaller, if it will hold them, the better. But now, as the roots are gorged with moisture, and the soil, though not wringing wet, is not dry, you must give little water at the root for some time, until fresh growth there has commenced; and this you must hasten by shading the few green leaves you have got from bright sunshine, by putting a bell-glass over them, if you have such a thing, and, above all, by dusting with water from a syringe, and sponging the stems and leaves. Only, in such circumstances, keep the tops all right, and you soon will have such abundance of healthy roots that, ere long, the necessity of watering them often will tell you that more feeding ground is required.

6. Plants that flower for a certain period every year, and require a season of rest before blooming so well again, are greatly benefited, when cultivated in pots, by receiving a *soaking* before potting them afresh, preparatory to fresh growth. This will hold good in a great many cases of deciduous plants, or those which we make such from our peculiar treatment. Take the *Fuchsia*

for an example. Here are the remains of some nice plants in a window; the flowers are now small and scanty, and leaves are yellow and falling off—remove them altogether, and put something more flourishing in their stead. Place them in the best situation you can command out-of-doors for sun and air, give them water to the end of the month, and then but little, and before frost transfer them to a cellar, a garret, or an empty room—a good shed, a barn, or a stable will do as well. Protect the stem in severe weather; but to make doubly sure and save the trouble of watering, pack the pots among dry moss, hay, sawdust, &c. If you have given them no heat, by March or April the buds will be breaking, and then you must think of potting them. If you wish large specimens, and can give them room, shaking off a quantity of the soil, and repotting again in a similar or a larger pot, will do admirably. If you wish for the greatest amount of beauty in little room, then soak the plants in water from 55° to 60°, and let all the earth go with it, but save the roots. Allow these roots to soak, examine them, prune only if necessary from weakness and decay, and repot in rich, but very light, compost, into similar, or rather smaller, pots, to be again reshifted. Here, as in all similar cases, water can only be safely given in quantities at the root, in proportion as the pot is *small*. If large, little or none should be given until fresh growth has taken place, and that should be encouraged more by application of water on the leaves and stems than at the roots. When growth is proceeding, but before going any length, pruning should take place, either by snagging in near to the stem, cutting down near to the surface, or merely removing the mere points of the shoots that are decayed. By the last, blooms will be produced earlier; by the two former, finer bloom and more luxuriant plants will be obtained. In placing a good quantity of good roots in a small pot, soaking afterwards could do little harm. In every other case it would be reprehensible and injurious.

These few remarks may help still further to enable beginners to see their way. As they are, they have been amply and extensively tested by experience. R. FISH.

HOTHOUSE DEPARTMENT.

EXOTIC STOVE PLANTS.

TILLANDSIA.—A genus of handsome stove-plants belonging to the natural order, Bromelworts. They are found in the hottest parts of the world, and, from the peculiar mode of growth, are often of service to the weary and exhausted traveller. The leaves are set round the stem of the plant, standing upright in a circle, wrapping over each other so closely that they are capable of holding water, and when the plants are large there may be found nearly a quart of water in the hollow of a single plant. In such hot regions, we may easily imagine how grateful and refreshing to the thirsty throat and parched lip such a supply of water would be. And the water is deposited there not only by the rains that fall—for that would be a very uncertain, and soon-exhausted source—but by the dews, that, as is well-known, fall copiously during the night in warm latitudes. The leaves of many species of *Tillandsia*, and plants belonging to the same order, are so formed as to catch the greatest quantity of this dew water. This is one of the many wise provisions of the *Giver of all good* to supply, as it were incidentally, the wants of his creatures. When the bason, or cup, formed by the leaves is full, the water runs over and supplies the roots of the plants with moisture in the hottest and driest of seasons. Hence, these plants are found flourishing like a green bay-tree, when most other plants are drooping with the great

heat and excessive drought. We are told by travellers, that the monkeys search for, and drink with avidity, this, in such climates, precious element. In writing on variegated plants we had occasion to mention one or two species of these fine plants, because their foliage was coloured. At present we will describe a few more that are worthy of culture.

TILLANDSIA AMÆNA (Pleasing T.); Brazil.—Flowers white, tipped with blue. A small-growing species, with spikes of five or six handsome flowers; leaves about six inches long, belled out at the base, and of a light green. Very desirable. 3s. 6d.

T. BULBOSA (Bulbous T.); Jamaica.—The base of the leaves forms a hard knotty process, which has the appearance of a bulb—hence its second name. The leaves are narrow and curiously twisted. Flowers scarlet and blue. A pretty species. 5s.

T. MORELLIANII (Mr. Morell's T.); S. America.—This has been lately introduced to English gardens from the Continent. It has handsome, graceful foliage, the underside is striped with powdery white bands. They are about half-a-yard long, and bend gracefully backwards towards their extremity. The flowers are of the deepest azure blue, springing out of scarlet bracts or floral leaves. It lasts a tolerably long season when in bloom. Decidedly the handsomest of the tribe at present in cultivation. It is at present rare, and the price is high. 21s.

T. PURPUREA (Purple T.); Brazil.—To the unpracticed eye this appears to be a plant of the Pine-apple kind; so nearly does it resemble that species that even gardeners have mistaken it for the fruit-bearing *Annanassa*. The flowers spring from the centre of the plant; bracts white; corolla long, and of the deepest purple. A fine species, but unfortunately does not last long in bloom. 2s. 6d.

T. STRICTA (Upright T.); W. Indies.—This is the smallest of the genus, but though a very minion amongst its fellows in size, it is equal in beauty to the largest. The whole plant does not exceed four inches in height, but perhaps in the whole range of the kingdom of Flora there is not a more exquisite gem when in blossom. The leaves are of a silvery green, about four inches long, recurved and aggregate. The flowers spring from the apex of the plant; they are white at the base, largely tipped with the most beautiful ultra-marine blue. They bloom in succession, and, therefore, last a considerable time in flower. Difficult to increase—hence it is scarce and dear. 21s.

Culture.—The first four species should be grown in pots, in a rich, light compost, formed of fibrous loam, sandy peat, and well-decayed leaves, in equal parts. They will grow much larger and finer if plunged in a moderately heated tan-bed, in a pit. Pot them frequently, till the flowers appear, and then remove them into the stove to bloom. After the bloom is over, keep them rather cool and dry, till fresh suckers are formed; for mind ye, unknowing ones, the plants of the whole of this tribe only flower once. If a large plant is desired, the suckers or side-shoots may be allowed to remain attached to the old stool, but when they have attained a considerable size, the old centre may be cut away. Increased by dividing the suckers from off the old stool or plant.

The last-named specie, *T. stricta*, thrives best fastened to a block of wood, with a little moss attached to it. It will, however, require strict attention in keeping it well supplied with moisture, either by syringing daily, or dipping frequently in tepid water. T. APPLEBY.

FLORISTS' FLOWERS.

MR. GLENNY ON FLORISTS' FLOWERS.

THE *Show at the Surrey Gardens* was, perhaps, the poorest in *Dahlias* that has taken place there, partly

because it was a fortnight too early for the general bloom; partly because since the Society reduced the number of seedlings from six, as established by the Metropolitan Society, to three, which enables the most uncertain flower to be shown, and, therefore, destroys all confidence in seedling awards; and partly because the exclusive nature of the Society has caused a general falling off. Of the seedlings we can say but little, there being of the most of them but three blooms, and in them nothing to indicate certainty; *Dr. Frampton* was an exception, for besides putting up three blooms, according to the regulations, the raiser staged eight to ten others. Of this flower we gave the first opinion. It is the best of the season so far, and the judges seem to have acted upon this everywhere; for it has first-class prizes wherever the awards are worth having, and even where they are not it gets commended. Some critics on flowers, like the critics of literature, think they show their judgment by detecting faults, accordingly there were not wanting persons who found out that it was too small; dealers said just the same of *Princess Radzville*, and, moreover, discovered it was good-for-nothing because the petals reflexed. In the same manner they have condemned the *King of the Dahlias*, because it reflexes; really good properties, however, in both cases, compensate for one fault; and, like *Princess Radzville*, which they cannot show without *The King*, will, in spite of its great fault, be universally grown and shown. The *Dahlia*, to be perfect, should be round in the outline, two-thirds of a ball in form, the centre well-up to the surface, the petals numerous and close; in other words, very double, and the whole of them placed symmetrically from the face to the back. Now *The King* has all these points in perfection. But the *Dahlia* should have one or two more beauties, which *The King* has not; the petals should be cupped, and free from ribs or puckers; *The King* is confessedly a reflexed flower. The petals are not free from puckers or ribs; but it is absurd to condemn any flower for a fault which is not fatal, while it has all the main beauties or perfections. We have not such another *Dahlia* for form. *Sir Frederick Bathurst*, *Queen of the East*, *Fearless*, the *Duke of Wellington*, *Toisson d'Or*, and some others, can occasionally be caught very beautiful, and very nearly of perfect form, but it is the height of absurdity to pretend that the very best can equal *The King* in form. If our "properties of flowers" are to form the standard, and nobody has ventured to dispute it as an authority, there is not in the whole family so complete a model. The new flower, *Dr. Frampton*, is the nearest to perfection, because, with the desired form, it has a very pretty cupped petal; moreover, it is a light variety, and we are short of light varieties of any really good stamp. The size is against it, while the present vulgar taste for size and coarseness prevails, but this is already declining. Ordinary people begin to see that coarseness is the inevitable result of large growth, and compactness as certainly the accompaniment of moderate culture. There were, at the Gardens, many seedlings exhibited to a great disadvantage, grown evidently for size; it was in vain to look for either compactness or symmetry, but we will not criticise any flower upon the sight of three blooms. *Hollyhocks* have a very pretty acquisition in the *King of Roses*, a beautiful rose colour; and *Satisfaction*, of a darker pinky shade; both had certificates. The *Fuchsia*, *Nil Desperandum*, was shown in good style by Mr. Smith; as was also *Diadem*, which we have already noticed as reflexing like the *Montagon Lily*. *Beauty of Deal*, a white, with crimson corolla; and *Elegant*, white, with pink corolla, were both very pretty, but not sufficiently decided to bear a high price. *Antirrhinums* were, as usual, abundant, but disgustingly weedy and worthless; not a striking colour among the whole lot, and there were scores. Among the plants the most remarkable, so far as novelty

goes, was the common, but very pretty, shrub, *Cestrum aurantiacum*, with its rich golden bunches of deep yellow (approaching orange) flowers, the plant not eighteen inches high. Although the plant is familiar, we never saw it at a show before, nor observed it flowering so small. *Odontoglossum grande* was exhibited by two different showers, but they were not like the same plants; one had the flowers so large, that the wings measured ten inches across from tip to tip; the other was a starved plant in bad colour. It is a grand orchidaceous plant. There is a prospect of the Society meeting soon to determine on steps to place it on a more substantial footing, and to infuse more vigour into the management, as it has been confessedly declining, but with materials in it capable of great things, if properly managed.

CARNATIONS, PICOTEES, AND GLADIOLUS (*H. L. Wells*, and *W. H. T.*).—Yellow-ground *Picotees* will never be worth growing until the ground is entirely free from all speckles and pouncey spots, or small bars. If on growing a pair or two next year the spots should disappear, it may be worth saving; but unless some of the flowers were perfectly free from the speckles, it is hardly worth while even to try it. The red-ground *Carnations* are worthless, however nicely marked. The *Gladiolus* is pretty, but very little varied from what we already have; the rosy-ground is lighter and prettier, perhaps, than those in the same class already known, and when grown better next year may produce blooms in higher character.

Black's CHARLES TURNER HOLLYHOCK, a very deep maroon, or red, of good substance, guard petals too large, but a showy distinct variety.

Charles Perry's LITTLE DAHLIA, not named, is beautiful in colour and habit, and, perhaps, under different treatment, may be large enough for a front row.

VERBENAS; Woodcock's *Magnificent*, certainly the largest bright one, and the best large one, in cultivation, though not a first-rate trusser. (*X. Y. Z.*)—All too narrow in the petal, and no new colours.

FLORISTS' FLOWERS CULTURE.

THE PELARGONIUM—(continued from page 371).

General Management.—Autumn plants that were cut down after the bloom was over will now have made some shoots. Those that are in large pots should be turned out of them, have most of the soil shaken off the ball, the roots trimmed in considerably, and be repotted into much smaller pots, in a compost not too rich, the object being now to cause them to grow slowly, and make short, stout shoots, in moderately-sized pots. Those that are in small pots and have been cut down, will not need repotting now, but a little top-dressing will be of service. Cuttings struck early, and potted off when rooted, should be repotted immediately, and their tops nipped off, to cause them to branch and make bushy plants. Seedlings, if not potted off singly, should be attended to at once; such as were potted early, will now require a slight second shift. Seedlings should not be stopped, because the florist will naturally wish them to flower as soon as possible, and taking the tops off has a tendency to retard early bloom.

Winter Management.—During this dreary season for plants, pelargoniums will not require much manipulation. Strict attention to giving air on all favourable occasions; keeping the house as dry as possible; giving a due supply of water, but no more; pulling off every decaying leaf as soon as it appears, and keeping the surface of the soil frequently stirred, to prevent moss growing, are the main points to attend to during winter. The temperature of the greenhouse during winter should never exceed 45°, nor fall lower than 34° or 36°. Too much heat is quite as injurious as too little. If kept too warm, the plants will draw up weak and spindling; if too cold, the leaves will turn yellow, or spot, or damp off, all of which are fatal evils in pelargoniums culti-

vated for exhibition, or, indeed, for any purpose. It will, we fear, be always necessary in this country to use artificial heat during winter, for these plants do not seem to become any hardier, or, in other words, more capable of enduring any greater degree of cold, than they did when the original species were introduced from the Cape of Good Hope more than two centuries ago.

Spring.—As the days lengthen, and the sun, with his invigorating power, causes vegetation to push forth into fresh foliage and flowers, it will be necessary to give to the pelargoniums the due attention this season requires. In potting them care should be taken that it is not overdone. Buds should be visible first, or the plants will continue to grow, and will not flower till late in the season. Many an anxious exhibitor, desirous of having his plants large and fine, has split upon this rock. Again, the size of the pots should be taken into consideration. The grand collections exhibited at Chiswick and the Park, are generally grown in, comparatively speaking, small pots. A plant two-and-a-half feet high, and three feet through, is placed there in a pot only eight inches diameter. The support for such an enormous mass of branches, leaves, and flowers, is supplied by means of liquid-manure, given at intervals only, and in a diluted state. It is in proportion to the skill and attention bestowed upon these plants, that such men as Messrs. Robinson, Turner, Gaines, Parker, Cook, and a host of others, succeed in producing such noble specimens. The two grand points being—First, to grow them into a good size and fine form; and, secondly, to give them just sufficient support to produce abundance of bloom without too gross or large foliage.

Training.—During spring, attention must be given to tying out the plants, so as to give the best form to them. The day of flat sloping tops, with a bristling phalanx of sticks, has, thanks to the good taste of both exhibitors and judges, passed away. The great object, now, is to hide every appearance of art in training them, using but few sticks, and those kept out of sight as much as possible. A good plan is to tie round each pot a broad piece of strong bass mat, and when the shoots are long, to bring them down with short pieces of bass tied to the piece which is tied round each pot. This does away with the sticks in a great measure, and gives a direction to the branches, so as to open out the centre, and allow more air to the whole.

Summer.—The plants will now be in their greatest beauty, and will require shading, to prolong the season of bloom. Too much air cannot be given, and to prevent the approach of bees and other honey-seeking insects, the apertures where air is admitted should be covered with worsted, or some other netting. It is found by experience, that if bees are admitted, they, in gathering their food, carry the pollen from flower to flower, and scatter it upon the stigma, the consequence is, the petals of flowers so covered with pollen drop off much sooner than if no such occurrence had taken place. This is a point worth attending to by persons growing for exhibition; for if the flowers in bloom to-day can be preserved by such simple means till to-morrow, the bloom that will open on that morrow will do the same, and there will be a greater number in flower at once, and, in consequence, a greater chance of winning a prize, besides rendering the plant longer attractive. As the weather is, during this season, often hot and dry, a much larger amount of water is required; frequently twice a-day will be necessary. If a dash or two of water were thrown upon the floor occasionally, during hot sunshine, it would create a moist and cooler atmosphere. Insects may abound, especially green fly—smoke frequently with tobacco, to destroy them. As the plants go out of bloom, cut them down, and set them out-of-doors to be repotted, as directed in the autumn-treatment above.

T. APPLEBY.

MISCELLANEOUS INFORMATION.

OUR VILLAGERS.

By the Authoress of "My Flowers," &c.

THERE is a poor man in our parish who has interested us a good deal, in various ways, and whose little history may, as far as it goes, be instructive to some who are naturally anxious to do the best they can for themselves and their families, but who do not always find the plan they adopt the best.

William Dyer was a young labourer, with a rising family, and was sometimes employed by a gentleman's gamekeeper to assist him in his duties, which made him rather handy and useful in that way; so that at last he was induced to undertake the care of a manor, and was engaged by a gentleman in the neighbourhood. He was a quiet, industrious young man, and proved a steady, careful keeper; and it pleased God to put it into his master's heart to be a friend to him and his little blind boy.

Poor Dyer was not a strong man in constitution—and, indeed, there are very few constitutions that can stand up against the work he had to do. He was obliged to be up and out in the woods during the bitter winter nights, exposed to wet and frost; either lying down on the cold, wet ground, or standing concealed for hours together, to watch for poachers, who abounded in the neighbourhood. He went home chilled, and stiff, and shivering; and in this way passed night after night, and winter after winter, until the occasional cold and cough settled into something that the warmth and rest of summer did not remove; and it was evident that something serious was the matter. We used to meet him in the copses, staggering about in a great-coat, with a handkerchief over his mouth, and his gun seeming a burden too heavy for him; but he would not give up till the last minute, and never spared his strength. At last he was obliged to put himself into the doctor's hands; was frequently unable to rise from his bed; and his poor, pale, sunken cheeks, and clear bright eyes, told of disease that man's skill could not turn aside.

The gentleman who employed Dyer was a truly kind and feeling man, and did everything he could for him; but he could not restore his health, nor could he prevent his taking severe colds in the exercise of his duties. The wages he received as keeper were too good to allow Dyer to give up his work as long as he could possibly hold it; and although his master spared him to the utmost, and allowed him to lay by, sometimes for weeks together, yet without dismissing him altogether, he could not prevent his doing what, in his state of health, was hurrying him fast to the grave. His whole business was to get wet, and cold, and weary—and there was no help for it.

England is a free country, and no man can be made to do that which he does not like; yet temptations are sometimes put in people's way that are too good to be lightly given up; and when these are offered for the sake of our personal pleasures only, there is something not quite pleasant to our feelings when we reflect on the matter. A poor man, with a family, is caught by the offer of fifteen shillings, or a guinea a-week, to take charge of a manor, shuts his eyes to the mischiefs of it, or hopes his health will be able to resist it. There is something attractive, too, in going lounging about with a gun over his shoulder, and a dog at his heels, and he forgets that months of fatigue and suffering are to be set against a few weeks' comparative ease and amusement. If a man is stout and healthy, perhaps all may be well; but if not, the consequences are serious, and very probably lasting. Ought not every one to feel himself, in a certain sense, his "brother's keeper," and where selfish interests and pleasures are concerned, to reflect before placing a snare in his brother's way? It is, indeed, very difficult to avoid "straining at gnats, and swallowing camels;" still, if we resolutely weighed every action in "the balance of the sanctuary," we should make fewer mistakes than we do now.

There is something inclining to savage in many gamekeepers, but Dyer was a very merciful man in his vocation. We never heard of unnecessary pain given to people about their dogs and cats as long as poor Dyer was in command;

but when he was obliged to give it up, his successor was very cruel, and no one could keep their cats a moment in the cottages around. One quiet, respectable man was returning from his work with a morsel of a dog, so small that, during his work, he tied it with a bit of string to his coat on the ground, and yet, because it happened to be snuffing about just off the pathway, the keeper, who fell in with them, pulled it out of its master's arms, who had caught it up, and shot it dead on the spot. Dyer was not a man of this mettle, and all were sorry when he was at length obliged to give his work entirely up, and apply for parish relief. He could now only sit coughing distressingly in his cottage, or creep out, when the sun shone warm, into the sheltered lane. He had an uncomfortable "partner," and his home did not appear to be one of unruffled peace, but he staid in it as long as he could, and his master was very kind to him.

Rest and quiet somewhat restored Dyer's health, after a time, or at least it relieved him in a measure, but he could not do an hour's work, and the parish pay did not enable him to pay rent, as well as live, therefore he felt at last obliged to try the union. He remained there all one winter, but he could not endure it longer, and left it with all his family when spring returned. A man without work, and a young family round him, is an object of real pity. Poor Dyer squeezed them into a small cottage, and rejoiced, no doubt, at first, at having them again with him; but the struggle for life is severe and trying to men in his state; young enough to work for them all, but unable to use a hand in their service.

Had this poor man been contented to remain as he was, a day-labourer, his health might have continued good; but striving for much, he has lost all. It needs much grace to walk wisely and prudently in our path through life. We act in our own strength—in our own wisdom—instead of taking counsel of God, and waiting upon Him for direction and help. "Woe to the rebellious children," saith the Lord, "that take counsel, but not of me." What a reproof to us all! High and low, rich and poor, do we not all take counsel, but not of God? It is this that so often brings us into rough and slippery places—into circumstances of peril, affliction, and regret.

Let us *all* cease to take counsel of our own hearts, and take it of God only. He may keep us low. He may lead us very quietly along the path we tread. He may, perchance, lead us over a stony road—but it will end *well*; we shall be guided right, and be in peace.

PLANTING.

(Continued from page 374.)

If you can help it, never disturb a bad subsoil when you prepare to plant a fruit-tree; exceeding two feet deep you need not farther go. If the surface soil lay only a foot deep over the subsoil, procure so much of the compost that I will presently speak of, and let it be raised *above* the natural level of the soil to the required thickness; it is far better to do this than to work up a mean wet subsoil in order to obtain depth. The farther the roots, and the means you adopt to prevent them entering these description of subsoils, or, in fact, any subsoil whatever, so much the better; and the surest means, and most generally come-at-able, is to place a layer of stone, or something imperishable of that sort, so thick, and in such a degree of compactness, upon the subsoil, that you may thereby guarantee a horizontal direction to the roots as soon as they come in contact with it, and so porous, that a still farther utility may be gained by its acting as a means of drainage to the tree.

It does not require a man, when he seeks the texture and quality of a soil in which to plant his trees, to perform all the minutiae of a chemical analysis of it—to separate the gases from the liquids, the organic from the inorganic—for

this is no more essential than for a husbandman to know that the blade of grass he treads under his foot is, in a chief measure, composed of flint, charcoal, water, and colouring matter; but it does require each to know that there must be a sufficient staple and fertility in the soil to carry the tree through a succession of years with health and fruitful vigor. The right description of soil, I would sum up in the following proportions: one-half the top spit (turfy matter of necessity included) of a pasture, or common; one-quarter ditch and road-scrapings, and one-quarter the natural soil, whatever it may be, when the trees are to be placed. If the soil, nevertheless, is of a nature inclined to bind, I would use with the mass, say one-eighth part each of the following: charred wood (this to be preferred), mortar, or brick rubbish, from the size of a hen's egg, downwards. The last observation as to the size is applicable to the turfy matter; do not let the compost be too fine; and again, *apropos* as regards the turf—place a layer of it over the drainage, so that the finer particles of soil shall not gain admittance and choke it.

Now, supposing the stake mentioned previously is driven firmly into the centre of the hole, then the drainage, and the layer of turf upon that; make the tree firm and fast to the post, through the agency of hay-bands and stout tar-cord; firstly, twisting some hay-band round the stem of the tree, and secondly, some cord round it and the stake: do not by any means allow the cord to cut or chafe the bark. The bole of the tree will exactly point out the depth it previously occupied in the soil, it must on no account whatever be buried deeper; at least, when I say deeper, a consideration here offers itself as regards the *settling* of the soil. If you form a fresh substance of earth two feet deep, it will finally settle down to one foot six inches, at least; therefore, in securing the tree to the stake, allow the level of the appearance on the stem to be even with that level which the surface soil of the station, or border, will eventually arrive at. The stem at the time will be buried six inches, taking the above depth of soil as a paragon; but it will be temporary; or not at all, if, when you have completed the planting, you draw the soil away a little from around the stem, punch-bowl fashion.

For the same reason that you shovelled out the mould in uprooting, bend all you can of the roots back and secure them to the stem; bring them down by degrees as you proceed in spreading and covering them properly with soil, but mind, *no* jumping; to see a man capering over the roots, horrifies me in about the same ratio as that of a sexton, when I behold him jumping over the newly-deposited coffin, in his process of filling up a grave: both practices are almost twin brothers with me, and shew a rude want of thought and feeling. The soil is much more effectually made to close round the young fibres and roots by the percolation of water, applied from the spout of a can, than by the former antics; and I pray you, good Mr. Sexton, if you *must* tread, "tread softly, that the blind mole may not hear a foot-fall." The manner I place the roots when I plant a tree—and I think it is reasonable, taking into consideration the settling down of the soil—is to lay them by degrees pointing with a slight angle upwards; in order that when the soil has finally settled they may be carried with it to a perfect level: roots once induced to throw off in that direction are notoriously inclined to keep it.

On what terms can I now speak in praise of the post? You are by this time become aware of its importance. There can be no pulling, or hauling, or any of those convulsive wrenchings which poor trees usually undergo in planting, giving one the idea that their roots and fibres should be possessed with all those stretching and elastic properties belonging to Indian-rubber; but as they are evidently not endowed with those peculiarities, or capable of the experiment being tried, through the all-protective principle of our post, I will, therefore, take this opportunity to relieve it from a part of that odium which common allusion to its patronymic is fain to imply.

Now the tree is planted (and a mulch, if it is planted in March, placed upon its surface-soil), do not suppose, for a moment, that you have done all that is required of you; watch and guard it, or them, carefully from all the ills and blight that trees are subject to. We all know that prevention is better than cure, so I would advise an instant brushing with

lime, clay, cow-dung, and water, brought to the consistence of thick paint, and to a sombre colour by adding soot to the mixture;—if expense is not an object, add half-a-pound of sulphur vivum to a bucket full of the aforesaid. If the bark is rough about the stem of the tree, scrape it smooth before you begin painting. To scrape off the loose, jagged bark is one of the chief operations to disperse the innumerable worms "i'th' bud;" and a second disperser in this respect is to thoroughly syringe the tree before, and as soon as possible after, the bloom is faded, with soap-suds, diluted, if they are *very* strong, with warm water; operating again with clean warm water the following evening.

When the wind is in the east, dark murky clouds move sluggishly over the firmament, and the skin on your face feels as tight as a drum; know by these presents, if you wish for fruit, and a healthy foliage, you must indefatigably syringe your fruit-trees, or otherwise set fire to any description of rubbish underneath, and give them a thorough smoking. By attending to these matters, and keeping the young breast-wood, or head-wood, as the case may be, thinned out properly, and, by *degrees*, those shoots left not allowed to cross each other, look for a handsome tree, equally and on each side proportionate, free, and flowing. Do not allow them to bear fruit the first year after transplanting, and pinch off the points of the young shoots, by degrees, about the middle of August: *young* leaves do more harm than good after that time. When the trees are become well-established, if you find them growing to too much top, root-prune them; be cautious, however, and do the thing by degrees; nature never likes a sudden check: in all your proceedings, let the eye of the mind govern the eye of the man.

What I have written applies chiefly to trees planted out in orchards, in contradistinction to those planted in borders, or as espaliers in a garden, though the whole article is applicable to one as the other, as a base.—UPWARDS AND ONWARDS.

(To be Continued.)

DOMESTIC MECHANISM.

FAST-BOILING STEW-PAN.—This form of pan, invented by Mr. Deakin, is admirably adapted for quick boiling; the principle is easily applicable to all other forms of cooking utensils. The mode of applying it is simple, and may be easily understood by a glance at the figure. A thin outer case of metal is applied all round, in the manner shown in the sketch; the heat in the upper part of the cavity thus left, becomes shortly so intense that glass can be melted almost instantaneously. We consider this a truly admirable and philosophical invention, and is well worthy of a trial



in families where economy is practised, not merely *talked* about. B.

TO CORRESPONDENTS.

** We request that no one will write to the departmental writers of THE COTTAGE GARDENER. It gives them unjustifiable trouble and expense. All communications should be addressed "To the Editor of The Cottage Gardener, 2, Amen Corner, Paternoster Row, London."

RANTING WIDOW, WANDERING SAILOR.—A correspondent (*Vashti*) says, "In the midland counties, the beautiful *Epilobium angustifolium* is frequently termed 'The Warwickshire Lad;' certainly a more pleasing title than that of the 'Ranting Widow,' as mentioned in several of your always valuable and amusing numbers. I have known a poor cottager, near Coventry, call the *Saxifraga tomentosa* 'The Wandering Sailor,' but of course I cannot tell whether this is the plant alluded to by your correspondent, T. M. W."

BREWING.—W. K.—W., says, "Permit me to caution your readers against one great mistake in the receipt for brewing, at page 342. Your correspondent recommends the water to be put on the fire the night before brewing, that his pleasant dreams may not be disturbed by early rising. This one mistake has spoiled many a brewing; and I know of one particular case where a servant never could brew good beer, although he had an excellent teacher and first-rate materials, and had assisted his master in making many a first-rate brew, until he confessed to the lazy trick of boiling (and spoiling) his water during the night. He never did

it again, and now knows the value of the first boiling of water for beer or tea."

DRIVING BEES (C. R. R.).—Yes; Mr. Payne says, that if you drive a swarm into an empty hive, and at night (an hour at least after sunset) dash them out, and then place a hive over them full of comb and bees, that the two colonies will join, and not fight.

GLOIRE DE ROSAMENE CUTTINGS (Ta).—If they are rooted in the pots, plant them out at once, by all means, in a very light, rich compost. To prepare them for planting out finally, next March or April, shake the balls, and let the cuttings be planted separately. You have the start of us, for our Rosamenes for next year are only now just beginning to form roots; but we shall not have to disturb them till the middle or end of April, our usual time for bedding them; but we plant them very thick.

BLUE VERONICA (T. M. W.).—You will see that you have been anticipated, and we quite agree with you about the merits of many of our wild native plants. Perhaps bringing forward one of them occasionally, as we intend to do, is as good a way as any to influence the public in their favour. Botanical reformation is out of our province, but you will see something about it to-day.

PENTSTEMONS (Goody).—*Pentstemon speciosus* and *Pentstemon cyananthus* are both blue, but different from each other. They are also quite different from the one Mr. Beaton recommends so highly, which, for the flower-garden, is the only blue one that is very easily grown. We cannot say where any of them, or of others we bring forward, can be bought. Pick off the flowers from the *Rampion*, and the seedlings may remain as they are till the spring.

SEEDS (A Subscriber).—You did not say what seeds you wished to know about; and we are at a loss how to answer your question about "seeds that may be sown now, with advantage, in a small garden in Oxfordshire." Do you mean vegetable-seeds, or flower-seeds? or what? and for what purpose? Pray let us know; or look to our back volumes.

CUTTINGS (C. B. M.).—Cuttings without pots means that the cuttings are planted in rows, or any other way, in a light compost all over the bottom of shallow cold pits, just the same as if they were planted in the open border; for such cuttings of *Geraniums* the glasses are not put on at first. When the glasses or lights are put on these pits, they are close cold pits, or hand-glasses on a large scale. Mr. Beaton has often told of the many thousands of *Geraniums* he preserves through the winter without artificial heat.

FOUR QUERIES (P. L.).—*Scilla esculenta* is a hardy bulb from North-west America, where it is called Quamash, and eaten by the Indians. It is hardy, and will grow very well in light, or sandy loam, or in a peat border as well. *Clematis ligustrifolia* is a climber that will grow in rich, light soil anywhere, or against your house. *Philadelphus* will grow in any common soil, whatever *Philadelphus* it is. *Convallaria* is the Solomon-seal, and will do in a border anywhere, and in any kind of earth, from clay to sand or peat. The bruised leaves of this plant is a good thing to put on bruises, or a black eye.

MITRARIA COCCINEA (Novice).—As far as we can make out, your plant of this is all right. You may lessen the quantity of water from this month, but it must not be kept dry like a *Fuchsia*. It is from the beautiful climate of the Island of Chiloe.

HABROTHAMNUS FASCICULATUS (G. M.).—Thanks for the good news that "the *Habrothamnus fasciculatus* lived out with you last winter without any protection;" what we always expected, and when it gets old, and hard in the wood, we have no doubt it will be treated on the walls like the fig; meantime, prepare to cover it well this winter, in case it may be a severe one, and about the end of next April it will repay you with flowers—certain. A full grown plant on a south wall, in a good condition, produces from 70 to 170 flowers for every leaf that was ripe the previous autumn; but, by-the-by, a south wall does not do for it at all, as the flowers do not stand the sun any length of time; a west wall is best, but an east will do, and so will a north. You say that your *Beeswing Dahlia* is orange; it was red once, we know, but perhaps florists have changed it by this time—Can any one tell us?

SMALL BULBS (Sarah).—*Oxalis*, *Ixias*, and all such small bulbs, where there is no greenhouse, should stand in a good cold pit, with power to keep the frost away, in pots or out of pots; if by the latter mode, give them a foot deep of rough sandy peat, and plant the tallest at the back. Sow part of your *Delphinium* at once, on a warm border, and the rest next March, and remove the plants to the flower-bed when they are three or four inches high. *Ranunculuses* and *Anemones*, to flower early, that is, the common border sorts, may be planted now, or from the middle of September. Can any one give our correspondent a good recipe for making *Swiss Cream*?

PLANTING.—A correspondent (*Rev. R. B.*) says, "I will, now that the planting season is approaching, suggest a plan which has occurred to me for ensuring drainage, and, at the same time, arresting the downward tendency of the roots of fruit-trees. Its principles have nothing of novelty, but I have not seen their combined operation recommended by any one. After considering the subject for the last two years, and making practical experiments, I have come to the conclusion that it is impossible effectually to prevent the roots striking down too deep, without employing some absolutely impervious material, the injurious effects of which, as causing stagnant moisture, would far exceed any benefits to be derived from it in the other respect. The system I have marked out for myself is to discard all substrata whatever, with the object of arresting the roots (which if pervious to water are so also to the roots, and, therefore, useless), and to trust to occasional root-pruning and complete undermining of the tree. To ensure a permanent and efficient drainage (and this is what I chiefly have to suggest), I would place, at the depth of from three to four feet, a layer of large stones, brickbats, &c., carefully levelled at top, and over these lay a coating of turves, accurately fitted together, and with the grassy side downwards. This will prevent the soil being washed down into the drain below; this application of turf was suggested by its employment, with a similar object, over drain-tiles. The depth at which the drain is placed would leave ample space for the operation of the

spade, when necessary, upon the roots." The passage you allude to is most objectionable, and escaped notice at the time.

HIMALAYAH PUMPKIN (De Cestria).—There are two causes, either of which cause it, and any other Pumpkin, to shed its fruit;—too little warmth and light, as when grown in the shade, and too little water at the root. You must decide for yourself which is the probable cause.

BLACK BEETLES AND CRICKETS (G. J.).—Can any state for the benefit of our correspondent, an effectual mode of destroying these, which infest his "kitchen and stables in tens of thousands?"

SELF-SOWN POTATOE (Ibid).—Our correspondent adds as a postscript:—"In my garden, which has been suffered to get over-run with weeds and potatoes (slovenly dug), we last week dug up a stem with thirty-two attached to it. These must have been self-planted last August or September, 1850. Six of them were small (size of a hen's egg), and the remainder a good size, four being very large; they were also in excellent condition. Hundreds of roots, also self-sown, have yielded well; a proof that the time of planting is not a matter of such great importance." We humbly submit that it is another evidence of the advantage of autumn-planting.

BIENNIAL SEEDLINGS (Rosa).—Hollyhocks, Canterbury Bells, &c., are best planted now in a bed to be covered with a frame in severe weather during the winter; but to be planted out where they are to remain, in early spring. Twelve hens and two cocks ought to yield you a supply of more than sixty chickens annually.

SPANISH FOWLS.—We have a communication for Z. if he will send us his address.

BOILER HEATED BY GAS (Troublesome).—For a small one, use a copper, flat-bottomed boiler, and an Argand burner, with an iron chimney instead of one of glass. Ten cubic feet per hour might be the consumption, but we cannot say, nor can we give the calculation you require. You must try the experiment.

SALE OF CUTTINGS (An Old Subscriber).—We do not know of any one who has adopted our suggestion, and has offered to sell cuttings. You will see that another correspondent is troubled with black beetles.

GARDEN GROUND (A Subscriber, Woolwich).—We cannot give plans for any particular garden, and if, as you say, you are "a complete novice," you had better ask some nurseryman to plant your borders for you, and we will give you any advice you need afterwards, as to improvements or culture.

SUGGESTIONS (V. P. T.).—We fear that we cannot adopt them.

FLOWERS FOR A GRAVE (T.).—We regret that our reply has given you pain, nor should we have been so unreserved in the expression of our opinion if the question had been to serve your own wishes. You say that your friend is undeserving of such censure; but be assured that his or her case is an exception to the rule, that they do not grieve sincerely who are sedulous to find out appropriate demonstrations of their grief. We like best the plain-turfed grave of our forefathers; but if an addition must be made, we would have no more than a plain border of *Rosemary* around it.

FUCHSIA CAROLINA.—A *Devonian* says—"Mr. Pince, of the Exeter Nursery, having obligingly corrected an error I have made regarding the parentage of this truly fine variety, I am enabled to give you its pedigree with confidence. It was raised from seed of *Exoniensis*, fertilised by *F. montana*, not *Radicans*, which Mr. Pince considers would have produced a coarse race; *Exoniensis* being a hybrid from *F. cordifolia*, fertilised by *Globosa*, the progeny, of which we write, is a descendant of many noble ancestors in which all their merits are united." You are quite right as to the passage inadvertently inserted.

NAMES OF PLANTS (A Constant Reader, Derbyshire).—Your perennial flower is *Epilobium angustissimum*, a hardy herbaceous perennial plant; the other dwarf bunchy succulent plant, is *Sedum virens*; the rockery is its proper place. The best plant that we are acquainted with, for garnishing the dessert dishes, &c., is the *Malva crispa*, a hardy annual. If attention to the spring and August-sowing be attended to, and it is grown in good ground, it will furnish an abundance of leaves. The beautiful curly leaves of some of the *Borecoles* may be used in the winter months for many purposes in garnishing; especially the good curly *Scotch Kail*; but there is a variegated variety grown by some, solely for the purpose, during the winter months. (*Amateur*).—So small and badly packed were your specimens, that we cannot be certain what are your plants. We think that 1. is *Swainsonia galegifolia*; 3. *Rudbeckia hirta*; and 4. may be a species of *Arenaria*, but from such very small bits, no one can be certain as to what they are. Three good specimens might have been sent, placed carefully between the folds of a common full-sized letter, for one penny, or two pence at the farthest, which would enable us to name them properly.


WASPS (An Old Subscriber, Norwood).—We know of no other mode of keeping wasps from your small Mulberry-tree than substituting a net, with very small meshes, for that you now employ.

DAHLIA ROOTS (Floridus).—The best mode of preserving these is in a cask, filled with sand, and kept in a cool place, from which frost and damp are excluded. March is the best time for sowing *Dahlia* seed. Sandy soil is good for bedded-out *Geraniums*, as it keeps them dwarf and promotes their flowering. It is easy to keep the soil sufficiently rich with leaf-mould, and moist enough by mulching.

CAPSICUMS AND CHILIES (R. O.).—The plants are best raised annually. The pods for pickling ought to be ready for pickling now. They are always fit for the purpose when they are of a full size and colour; and as these vary almost in every species, we cannot give you a more definite answer.

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WEEKLY CALENDAR.

M D	W D	SEPT. 25—OCT. 1, 1851.	WEATHER NEAR LONDON IN 1850.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bef. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in In.						
25	Th	Wild Honeysuckle's seed. fl.	29.803—29.682	68—48	S.W.	—	52 a. 5	52 a. 5	sets.		8 12	268
26	F	Hedge Accentor resumes song.	29.870—29.860	60—44	S.	72	53	50	6 a 52	1	8 33	269
27	S	Birch turns yellow.	29.802—29.690	67—48	S.W.	49	55	47	7 18	2	8 53	270
28	SUN	15 SUNDAY AFTER TRINITY.	29.867—29.782	63—42	W.	—	57	45	7 46	3	9 13	271
29	M	MICHAELMAS DAY.	29.846—29.380	62—42	S.W.	29	53	43	8 17	4	9 33	272
30	Tu	Martins mostly gone.	29.359—29.266	59—40	W.	01	60	40	8 56	5	9 52	273
1	W	Arbutus flowers.	29.596—29.249	59—38	N.W.	08	VI	V	9 40	6	10 12	274

JARVIS, GEEVAS, or GEEVASE MARKHAM, for he spelt his name in all these modes in those days of phonetic spelling, was of good descent, for he dedicates *How to choose, ride, train, and diet both hunting horses and running horses*, "to the right worshipful and his singular good father, Master Robert Markham, of Cotham, in the county of Nottingham, Esquire;" and Thoroton, in his history of that county, shows that they were an old and wealthy family. Gervase was, however, a younger and portionless son, for in those days all the broad acres went to the eldest son to maintain the dignity of "the house," and the younger sons, "cursed with poor gentility," were doomed to carve with their swords, or grub with their pen, a precarious subsistence. At different periods of his life, Gervase was dependant upon each of those dangerous weapons, but he did not have recourse to his pen until a nearly mortal wound, and old age, unfitted him for cavaliering.

In early manhood, we are told by one of his relatives, he was "a great confidant, or as the phrase now is, the gallant of the Countess of Shrewsbury, and was in those days (1591) usually termed her champion. A proper handsome gentleman he was, and of great courage." In a cause interesting to the Countess, having made some statement unpalatable to Sir John Holles, the latter wrote to him thus:—"Gervase Markham—I affirm that you lie, and lie like a villain, which I shall be ready to make good upon yourself, or upon any gentleman my equal living." Shortly afterwards meeting, and their rapiers had recourse to, Markham fell grievously wounded; nor was this the worst, for vowing rashly to be revenged or to die without the eucharist, and still more rashly clinging to the sinful resolve, he never more received that sacrament, though he lived to extreme old age. Maimed by the wound, and unable to endure violent exercises, he now had recourse to his pen, and the earliest of its productions was that work on Horses which we have already noticed. That subject exhausted, he had recourse to translating, for which he was well qualified, by being "perfect master of the French, Italian, and Spanish languages," and some of his translations are of extreme rarity. We will but mention *Rhodomanth's Infernall, or the Devil conquered*, of which the original author was Philip des Portes, and some passages of the translation will bear comparison with Fairfax's Tasso, as this extract testifies:—

"Where ere he went the Furies fled before him,
The whilst his pride augmented by their flight,
All things without hell gates ran to adore him:
And now the draw-bridge stands within his sight,
On it he proudly leaps, that quaking bare him,
And vaunts himself thereof Lord, King and Knight:
For why th' Ecchidnian cur for fear was fled
And in the burning lake did hide his head.
And now he pulls the Eban bridge in sunder,
And having Charon this while by the heels,
Like to a maul makes his old pate to thunder,
Beating the bridge, whose rented pillar reels."

Not contented with translating poetry, he ventured to write a tragedy, *Herod and Antipater*, in conjunction with Mr. Sampson; and *The Dumb Knight*, "a pleasant comedy," published in 1608, is said on its title page to have been "written by Jarvis Markham," but he had as his coadjutor in its composition Lewis Machin. The latter, in its preface, tells "the understanding reader" that he publishes it "in his (Markham's) absence," to refute the slanders concerning it that have been uttered by "rumour, that hydra-headed monster, with more tongues than eyes;" rumours of which we now have no other record. Varied in his acquirements, confident in his abilities, and prompted probably by necessity, he next addressed himself to the literature of the soil, although he knew little of gardening or of farming, for he confesses as much when he says, in his *Farewell to Husbandry*, "Methinks I hear one fool say—Why writes he of husbandry and is no husband?" The work was published in 1620, and is entitled:—*Farewell to Husbandry, or the enriching of all sorts of barren and sterile grounds in our kingdom, to be as fruitful in all manner of grain, pulse, and grass as the best grounds whatsoever*. "Attained by travel and experience." "The experience was the expense of a bitter and tedious winter, but the contentment (in gaining my wish) made it more pleasant than all the three other seasons." The conclusion of the volume, "On the Carter's Office," &c., is taken, verbatim, from Leonard Mascall without acknowledgment.

This was only one of the many works written by him on the same subject, but we can do little more than mention their titles. In *A Way to get Wealth*, which embraces the management of cattle and fowls, recreations, the office of a housewife, the enrichment of the weald of Kent, enrichment of barren grounds, the making of orchards, and the best husbanding of bees, Markham apologises for including so many subjects, and not confining himself to writing about horses "with which he had been exercised and acquainted from his childhood." However, he had taken to him an assistant, L. W. (an inversion of the initials of the real author, William Lawson), who wrote the chapters on orcharding and bees.

In his *English Housewife*, he lays down a law which, if enforced, would

now keep a vast majority of our countrywomen in spinsterhood, for he says, "I hold the first and most principal knowledge belonging unto our English housewife to be a perfect skill and knowledge of cookery, because it is a duty rarely (excellently) belonging to a woman; and she that is utterly ignorant therein may not, by the laws of strict justice, challenge the freedom of marriage, because, indeed, she can then but perform half her vow; for she may love and obey, but she cannot cherish, serve, and keep him with that true duty which is ever expected!"

Evelyn wrote upon *Sallads* a goodly folio; and no wonder, for, according to the following recipe, it was in those days no simple mixture but an intricate compound, which Markham heralds in thus—"To compound an excellent sallat, and which, indeed, is usual at great feasts and upon princes' tables; take a good quantity of blanched almonds, and with your shredding-knife cut them grossly; then take as many raisins of the sun clean washed, and the stones picked out; as many figs, shred like the almonds; as many capers; twice as many olives; and as many currants as of all the rest, clean washed: a good handful of the small tender leaves of red sage or spinach: mix all these well together with good store of sugar, and lie them in the bottom of a great dish; then put unto them vinegar and oil, and scrape more sugar over all: then take oranges and lemons, and pairing away the outward piles (skins), cut them into thin slices, then with those slices cover the sallat all over; which done, take the fine thin leaf of the red cole-flower, and with them cover the oranges and lemons all over; then over those red leaves, lay another course of old olives, and the slices of well-pickled cucumbers, together with the very inward heart of cabbage-lettuce cut into slices; then adorn the sides of the dish, and the top of the sallat with more slices of lemons and oranges, and so serve it up."

One of the most curious, though not the most enlightened of his works, is *The Second Book of the English Husbandman*, and of it an amusing portion is that which gives the signs and omens whereby the husbandman may foretell the character of the future seasons and years: "If," he says, "*Christmas Day* shall fall upon the *Sunday*, the year shall be good, seasonable, and abounding with all store and plenty; if it fall upon *Monday*, the year shall be reasonable, temperate, and fruitful, only something subject to inundation of waters, loss by shipwreck, and some mortality of people; if it fall upon *Tuesday*, the year will prove very barren and unfruitful—much dearth will reign, and among people great plague and mortality; if it fall on the *Wednesday*, the year shall be reasonably seasonable, though a little inconstant—there shall be plenty of all things, only much sickness, and great likelihood of wars; if it fall on the *Thursday*, the year shall be generally very temperate and wholesome, only the summer subject to moistness, and much division is like to fall amongst the clergy;* if it fall on the *Friday*, the year shall be barren and unwholesome, for sickness shall rage with great violence, much mortality shall fall among young children, and both corn and cattle shall be scarce, and of a dear reckoning; if it fall on the *Saturday*, the year shall be reasonably good and plentiful, only the people of the world shall be exceedingly perverse, and much given to mutiny and dissention one against another."

When more than eighty years of age, this veteran man of the sword and the pen still continued to write, and found new themes in *The Art of Archery* and *The Whole Art of Angling*. There is reason to believe that he bore arms in the king's service during the Parliamentary war, and it is certain that he dedicates his book on archery to Charles the First, and recommends that regiments of English bowmen should once more be gathered together for military service. Markham had a very different estimate of angling from that entertained by Dr. Johnson. The latter defined it, "a stick and a string, with a hook at one end and a fool at the other;" but Markham says, the angler "must be a general scholar, and seen in all the liberal sciences; as a grammarian, to know how to write, or discourse, of his art in true and fitting terms. He should have sweetness in speech to entice others to delight in an exercise so much laudable. He should have strength of argument to defend and maintain his profession against envy and slander." So it is pretty evident angling had its Dr. Johnsons in those days.

We have sought carefully, but vainly, for further records of Gervase Markham, and here even the heralds fail us; for though these respectable recorders of births, marriages, and deaths, have not neglected the "Markhams of Cotham," yet the name of Gervase forms no branch of the heraldic tree, and we know not either the date of his birth or of his decease.

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-four years, the average highest and lowest temperatures of these days are 65° and 45.7° respectively. The greatest heat, 82°, occurred on the 25th, in 1842, and the lowest cold, 24°, on the 27th, in 1828. During the period, 84 days were fine, and on 84 rain fell.

* In the present year Christmas Day falls upon a Thursday; and we have had anything but clerical union—so old Markham made one good guess.

HAVING had occasion recently to refer to drawings illustrative of the agricultural implements of the ancients, we can safely observe that there is not one of those implements that has remained without alteration in form, or any improvement, so long, handed down as it has been from nation to nation, as *the scythe*. There it is on the engraved stones of the Assyrians, Chaldeans, and Egyptians, in the manuscripts of the Greeks, Romans, and Saxons, with its long straight handle, and awkwardly-affixed blade, just as it is to this day on the continent, and even in some of the northern counties of England. This adherence to the old form and mode of fixing is certainly not because that form and mode are perfection, for, on the contrary, never was any mode of uniting a blade to a handle much more rude.

Thus convinced, we went to the World's Exhibition with a hope that we should find some improvements, nor have we been disappointed, for *Boyd's self-adjusting Scythe* removes nearly all the objections to the old implement.

There are various scythes for gardening purposes contributed to that Exhibition by France, Austria, Prussia, Belgium, and America.

In the Prussian department the scythes are made of various lengths, of wrought steel and iron, in the same manner as our common scythes. The scythe-blades, however, present a concave upper surface; consequently the under side is slightly convex, as well as the usual rise of the point, which well-made scythes ought to have.

There are some good scythe-blades exhibited, also, in the Belgian department; they are made of cast-steel, with a back to strengthen the blade, rivetted on to the plate in the manner of our patent scythes. The formation of the blade is different, as they present a plane surface to the ground, while our English scythes are set with their cutting edge rising slightly from the surface. The Belgian scythes are concave the same as the Prussian, which has the good effect of keeping the edge of the blade from stones and earth, as well as leaving a close-shorn green surface after the operator; for if the edge lays too close to the turf, in the hands of an unskilful person, he is liable to score the grass, and give it an uneven appearance. Our reporter, a practical man, likes the make of these scythes very much, and thinks them equal, if not superior, to the best made scythes we have; and that it would be well if some of our English manufacturers would make scythes in the same form.

The American scythes are made much like our own common scythes, and of various lengths, to suit the wants of different persons and districts.

Fussell and Sons, Mill's Iron Works, Somerset, exhibit a large quantity of common scythes, of various lengths. It is remarkable that scythes are used of such different lengths in different districts of this country. In the north of England they are used of a great length, especially for long grass or hay, also a good length for short grass; whilst in the midland and southern counties the scythe-blade gets gradually shorter, and in Somersetshire it is shorter still; yet the south country-

man will cut down as much hay in a day as the northern will do with his scythe, though this is nearly as long again as the scythe used in Surrey.

199.—BOYD'S SELF-ADJUSTING, OR DOUBLE-ACTION SCYTHE

Is the same in appearance as a common scythe, with the exception of the part where the blade is fastened to the handle. It is so fastened with two joints, screws, and nuts. To the end of the handle or heel, a piece of iron is fixed, to which another short piece of iron is fastened by means of a screw and nut, which is the first joint; at the end of this piece the face of the joint is turned at a right angle with the first joint; then at the end of the blade the back is flattened and turned up, and is fixed to the end of the piece of iron by means of a screw, and forms the second joint; by this joint the edge of the blade can be turned either up or down, and fixed by the screw at any required position, whilst by means of the first joint the point can be put at the proper working angle, or shut up at pleasure, and is fixed as required by the screw and nut.

This scythe, as the inventor says, can be put together without the aid of a blacksmith; in fact it only requires to unscrew the second joint, and a new blade can be put on, or the old one taken off for grinding. According to our old mode, the temper of the scythe is often spoiled by turning the heel, as they never come from the manufacturer's hands in proper order for fixing to the handle. We think this scythe a great acquisition, for it not only saves much time and trouble now lost in preparing the scythe for work, but can be set with facility and certainty.

To identify a *species* of plant by its flower or its fruit is no very difficult matter, now that botany has had its Linnæus, Jussieu, Decandolle, and Endlicher. These able systematists have so arranged the volume of vegetable nature, and have furnished us with such indexes, that it is comparatively easy to turn to the page on which is, or ought to be, inscribed the species before us. Unfortunately, it is the very reverse with *varieties*, and especially so with the varieties of cultivated fruits. Let any one turn to the Fruit Catalogue of the London Horticultural Society, and ask if there is any guide by which he can discover the proper name to be applied to the apple on his table out of the 897 names, and as many synonymes, which that Catalogue contains? The answer must be—There is no such guide. To discover the required name you must consult some one intimate with fruit culture; or you may turn over the portraits in the old Pomological Magazine, or in the works of Ronald, Maund, and others, for the chance of finding one sufficiently like to justify you in saying—This is the fruit. We need not point out how tedious and uncertain is this process, and we most earnestly hope that some Pomological Linnæus will arise, who will classify our fruits, so as to give us some guide to aid us through such a labyrinth as he enters who endeavours to identify a nameless apple or pear.

We have before us a work which contains a mass of information to aid in acquiring such a guide. It is entitled *British Pomology: or the History, Description, and Classification of the Fruits, and Fruit-trees, cultivated in the Gardens and Orchards of Great Britain*. The author is Mr. Robert Hogg, proprietor of the Brompton Nursery, well-known for its vast assemblage of fruits, and we are aware of no one more capable, or who has more facilities than that gentleman to enable him to classify them. What "classification" he will adopt we cannot say, as it does not appear in the four parts which have as yet issued from the press, but we can testify that the work contains fuller information relative to each variety, so far as at present published, than any other English volume. It is a most valuable addition to our garden literature, and that our readers may judge for themselves, we quote what Mr. Hogg says relative to the best of our earliest apples:—

JOANNETING.—H.

SYNONYMES.—Jennetting, *Coles' Adam in Eden*, 257. Juniting, *Rea Pom.* 209. Jeniting, *Worl. Vin.* 161. Ginetting, or Juneting, *Rail Hist.* ii. 1447, 1. Juneting, or Jennetting, *Switz. Fr. Gard.* 134. Gennetting, *Lang. Pom.* t. lxxiv. f. 2. Juneting, *Fors. Treat.* 109. Early Jennetting, or June-eating, *Aber. Dict.* White June-eating, *Hort. Soc. Cat.* ed. 3, n. 374. *Down. Fr. Amer.* 78. June-eating, *Lind. Guide*, 4. *Rog. Fr. Cult.* 27. Owen's Golden Beauty, *Hort. Soc. Cat.* ed. 1, 717. Primiting, in *Kent and Sussex*.

FIGURE.—Ron. Pyr. Mal. pl. i. f. 3.

Fruit, small; round, and a little flattened. Skin, smooth and shining, pale yellowish-green in the shade; but clear yellow, with sometimes a faint tinge of red or orange next the sun. Eye, small and closed, surrounded with a few small plaits, and set in a very shallow basin. Stalk, an inch long, slender, and inserted in a shallow cavity, which is lined with delicate russet. Flesh, white, crisp, brisk, and juicy, with a vinous and slightly perfumed flavour, but becoming mealy and tasteless, if kept only a few days after being gathered.

This is the earliest apple of the year, the first of Pomona's autumnal offerings; it is in greatest perfection when gathered off the tree, or immediately afterwards, as it very soon becomes dry and mealy.

The tree does not attain a large size, but is hardy and healthy. It is not a great bearer, which may, in a great measure, account for it not being so generally cultivated, as its earliness would recommend it to be. If worked on the paradise stock it may be grown in pots, when the fruit will not only be produced earlier, but in greater abundance than on the crab, or free stock.

This is one of our oldest apples, and, although generally known and popular, seems to have escaped the notice of Miller, who does not even mention it in any of the editions of his dictionary. As I have doubts of this being the Geneting of Parkinson—his figure being evidently intended for the Margaret, which in some districts is called the Joanneting—the first mention we have of this variety is by Rea, in 1665, who describes it as "a small, yellow, red-sided apple, upon a wall, ripe in the end of June."

The orthography which I have adopted in the nomenclature of this apple may, to some, at first sight, seem strange; but I am, nevertheless, persuaded it is the correct one. The different forms in which it has been written will be found in the synonymes given above, none of which afford any assistance as to the derivation or signification of the name. Abercrombie was the first who wrote it June-eating, as if in allusion to the period of its maturity, which is, however, not till the end of July. Dr. Johnson, in his Dictionary, writes it Gineting, and says it is a corruption of Janeton (*Fr.*), signifying Jane or Janet, having been so called from a person of that name. Ray says, "*Pomum Ginettinum, quod unde dictum sit me latet.*" Indeed, there

does not seem ever to have been a correct definition given of it.

In the middle ages, it was customary to make the festivals of the church, or saint's days, periods on which occurrences were to take place, or from which events were dated. Even in the present day, we hear the country people talking of some crop to be sown, or some other to be planted at Michaelmas, St. Martin's, or St. Andrew's-tide. It was also the practice, during the reign of Popery in this country, as is still the case in all Roman Catholic countries, for parents to dedicate their children to some particular saint, as Jean Baptiste, on the recurrence of whose festival, all who are so named keep it as a holiday. So it was also in regard to fruits, which are named after the day about which they came to maturity. Thus, we have the Margaret Apple, so called from being ripe about St. Margaret's-day—the 20th of July. The Magdalene, or Maudline, from St. Magdalene's-day—the 22nd of July. And in Curtius we find the *Joannina*, so called, "*Quod circa divi Joannis Baptistæ nativitatem esui sint.*" These are also noticed by J. B. Porta; he says, "*Est genues alterum quod quia circa festum Divi Joannis maturisit, vulgus Melo de San Giovanni dicitur.*" And according to Tragus, "*Quæ apud nos prima maturantur, Sanct Johans Opffel, Latine, Præcocia mala dicuntur.*"

We see, therefore, that they were called Joannina, because they ripened about St. John's Day. We have also among the old French pears *Amiré Joannet*—the Admired, or Wonderful Little John, which Merlet informs us was so called, because it ripened about St. John's Day. If then we add to Joannet the termination *ing*, so general among our names of apples, we have *Joanneting*. There can be no doubt that this is the correct derivation, and signification of the name of this apple, and although the orthography may for a time appear singular, it will, in the course of usage, become as familiar as the other forms in which it has been written.

GARDENING GOSSIP.

FORMERLY, the usual great annual Dahlia Show, brought to London, or wherever it was held, a vast number of growers (amateur and professional) who never visited the metropolis at any other time. Last year Mr. Glenney gave up the management of the annual show, which he had conducted for many years, and some gentlemen undertook to produce one upon the same scale at Notting-hill. It was accordingly advertised in the almanack to take place at Ledbroke-square, on the 11th of September, a day adopted with the knowledge and acquiescence of all parties. Not a single announcement beyond this was made, and people looked in vain for schedules, or advertisements in the garden papers and books, and no notice was taken of a change until the approach of the day came much too close to be pleasant. Then it was that the 17th was mentioned, and passed round among the growers who were in the habit of meeting each other; but in the country, among amateurs, who came but once a year to show or see flowers, and that always at the "great show," not a word would be seen in the ordinary channels of information, until, in lists of the September shows, the 17th was mentioned for "Notting-hill 'grand Metropolitan Show." The growers who met at Shacklewell on the 12th were, perhaps, made acquainted with an intended change; but the readers of THE COTTAGE GARDENER, and of the other garden papers, were kept in happy ignorance; and, in common with ourselves, saw, if they saw at all, the first intimation of it in the daily papers, the very day before it was to take place. As we, and many of the amateur growers in various parts of the country, look to garden papers for informa-

tion upon shows, and many take no other; for our own part, had we not been travelling nearly two hundred miles from London, with a full determination to be up on the 17th, we should not have seen the advertisement part of the *Times*. The thing, then, stands *thus* (we shall not venture to describe the disappointment of hundreds, who used to come to town, and pay their shillings to see the new flowers): From October to August the meeting is advertised for the 11th. In September it was partially announced for the 17th, but it was *held without any timely notice on the 11th*. Thus we, who never missed for many years this annual gathering, first lay ourselves out for the 11th, and Shacklewell the 12th. We see little public notice of either in the papers, but none of the principal. Vague conversations about changes unsettle many, because there was no official notice in the papers to set them right. Then the 17th is printed as the day in the monthly works, and when everybody who calculates upon the 17th makes his arrangements, he hears and sees nothing to the contrary till too late, when he finds it is all over. This is the way floriculture is damaged. Unless there be a good wind-up Dahlia Show in or near the Metropolis, and that well advertised, the dealers will find a difference in the demand round London. There has not been anything like such a gathering this year as there ought to have been, and would have been, and the whole thing has been spoiled to save a few shillings in advertising.

E. Y

NEW PLANTS.

THEIR PORTRAITS AND BIOGRAPHIES.



VARIOUS-LEAFLETED LABICHEA (*Labichea diversifolia*). —*Paxton's Flower Garden*, ii. 75.—This is a genus of Leguminous Plants (*Fabaceæ*) which, in affinity, comes nearest to the *Cassias*. They are low bushes, natives of

the Swan River colony and places adjacent, and are interesting greenhouse plants in this country, having gay yellow flowers. Two more species of the genus have been already introduced, *bipunctata* and *lanceolata*. The present subject, as far as can be said from a limited experience, promises to uphold the character which the other two have established for the genus, which was first named by Grandichaud, a French botanist and voyager, in honour of M. Labiche, his countryman, an officer who accompanied Freycinet in his voyage round the world in the French ship *Uranie*, and who died on their passage to the Moluccas. The species of this genus are diandrous plants, having but two stamens and one style; that is, in the system of Linnæus, *Diandria-Monogynia*. This, like many others of the Australian leguminous plants, is very apt to run away into long straggling shoots when young, and unless this disposition is checked at first by a timely pruning, or cutting off the points at certain intervals, the specimens are not tolerated in these days of compact and close-growing plants.

Labichea diversifolia was first seen by Mr. Preiss among the quartz rocks on the west side of New Holland, and was first bloomed, we believe, in this country by Mr. Glendinning, at his Turnham-green Nursery. It bloomed in April. The leaves are unequally hand-shaped, the leaflets being narrow, spear-head-shaped and spine-pointed, smooth, thick-edged, and the central leaflet much the largest. Flowers, yellow, with the base of the vexillum or flag-petal stained with scarlet, in small bunches or racemes; calyx and corolla each four-parted; one anther much longer than the other.



SLENDER DEUTZIA (*Deutzia gracilis*). — *Gardeners' Magazine of Botany*, iii. 225.—This is an extremely graceful, new hardy shrub, and no doubt it will become a favourite pot-plant with those who enter the lists of competition for the prizes offered by the great London societies. We risk our reputation in placing it next in importance to the *Indigofera decora*, another hardy, or nearly hardy, plant, with which Mr. Iveson, the skilful gardener at Sion House, surprised the gardening world three years ago, and at each of the May exhibitions since, and without aspiring to the spirit of prophecy, we predict that the same intelligent gardener will gather a good weighty medal for a *Deutzia gracilis* next May, at one or other of our metropolitan gatherings. The Messrs. Veitch, of Exeter, introduced it last spring on the London stages for the first time, when every one who saw it is said to have admired it much.

The genus *Deutzia* was named by Thunberg, the Swedish botanical traveller, in his *Flora Japonica*, which appeared in 1784, to commemorate the name of John Deutz, a Dutch naturalist. This species, *gracilis*, is a native of Japan, whence it was introduced first to the continent by Dr. Siebold, whose name has been long associated with the Japan flora, and who, with Professor Zuccarini, has produced a very fine work on the Japanese plants. According to Dr. Siebold's account of *Deutzia gracilis*, it grows to six or seven feet high on its native hills, and no doubt it will attain that size, if not more, under cultivation. The genus is an Asiatic one, and belongs to the Natural Order *Syringas* (Philadelphæacæ), and to the third order of the tenth class in the system of Linnæus, *Decandria-Monogynia*.

Deutzia gracilis has long, flexible, and, generally, drooping branches; leaves between the wedge and spear-head-shape, finely toothed on the edge, and fine-haired on both surfaces; flowers white, in panicles or loose bunches at the end of the branches; calyx pitcher-shaped, petals bluntly reversed, egg-shaped, rather hooded, and fine-haired on outer surface; stamens in two rows, anthers yellow; styles three. B. J.

THE FRUIT-GARDEN.

FRUIT-ROOM, FRUIT-GATHERING, &c.—If the fruit-room has not been put in order already, it should be done immediately. The first step is repairing; if any blemish occurs in the shelves, such must be safely repaired, for it is not an agreeable affair to have superior fruit rolling or falling from one shelf to another through the winter. Anything connected with the rest of the interior, also, must be repaired, if necessary; and now the walls may receive a coat or two of limewash. It is too late to talk of painting, if ever so requisite: such should be done in the months of June or July, in order to let all unpleasant odours pass away; nothing is more detrimental to the fine flavour and the aroma of fruits than fresh paint. As soon as these matters are carried out, the shelves should, if in any way dirty, be dry-swept as clean as possible; and then a damp cloth may be passed over them to extract any remaining impurities, depending more on what has been termed "elbow grease," than water, at this late period. This done, our practice is to burn a pan of sulphur in the room, in order to destroy, if possible, the spores of fungi; but before this is done, the room should be made dry by thorough ventilation for a few days, taking care to close the windows the moment the atmosphere becomes damp or rainy. In a week, with care, the room will be ready for the fruit; but, indeed, all these things, with the exception of the sulphuring, ought to have been done long since. The very best plan is to carry out such proceedings the moment the last fruit can be removed in June. Nevertheless, as such rooms are generally used for the preserving or retarding of summer fruits, some amount of cleansing is sure to be requisite.

Most fruit-rooms are latticed, that is to say, the shelves are composed of parallel strips of wood, admitting air between; but we are not assured that this is the very best plan. We have known fruits keep excellently on solid shelves, with nothing but cap-paper beneath them; and as for placing fruits of any importance on the latticed shelves, without anything beneath, we do think there is room for objection. Various materials have been suggested to place under them, and kiln-dried straw has been strongly recommended. Whatever the material be, it should be tolerably soft, but not too absorbent: thus, hay would be too soft, its particles

too fine, and it would, consequently, lay too close, and hold an amount of moisture which would soon tend to mouldiness; reeds, on the contrary, would be too coarse, and cause the fruit to roll about and be very inconvenient. Any material from the cereal tribes, therefore, should be somewhat intermediate in character; and we have pointed to hay, on the one hand, and to reeds on the other, as the two extreme points, and as suggestive of proper materials.

APPLES.—This season they are unusually abundant, and many persons will be puzzled as to what to do with them. Such we confess to be our case; and the best way, if a decent market-price could be realised, would be to sell all those which cannot be relied on for safe keeping. But to sell at 1s. 4d. the bushel, the price we have been offered, is, to use a familiar and homely adage, rather "against the grain." We shall, therefore, wait a few weeks, or as long as we can, hoping for an advance. Where there is such a pressure of fruit, that the usual fruit depôt will not hold them by fair means, it is plain that some other provision must be made. Upper rooms, outhouses, &c., must be called in to our aid; or, indeed, they may be pitted like potatoes: the latter plan, however, we would, if possible, avoid; for although apples may be kept longer fresh by such means, yet it is ever at the expense of flavour, at least such has been our experience. If any *must* be thus treated, we should say, let it be the spring kitchen-apples; but here we do not think it safe to put them in a pit until they have undergone the fermentation always consequent on piling quantities together when newly-gathered. Perhaps, then, it would be good policy, if need be, to pile such in a dry room, or shed—one, however, capable of a liberal ventilation—and to cover them for a short period with some thin material. When slightly sweated, they might be carefully spread over the floor to dry, and when thoroughly so, they might be pitted. The practice in former days was to wipe them all, after sweating, with dry cloths; but although such *may* be practicable with regard to superior dessert kinds, it will not pay to consume much labour over fruit at the price before quoted. In pitting, some caution must be exercised. We never practised it to any extent, and, therefore, cannot claim any weight for the advice offered; but of one thing we feel pretty well assured, that layers of straw, or some intervening body of a neutral character, should be introduced alternately with the apples; and here straw, severely kiln-dried, as being in that condition averse to absorption, would probably prove an excellent material. As sure as a large body is placed together early in the season, so sure will fermentation ensue, and thin-skinned fruits are not capable of enduring a great amount of this. We should say that three apples in depth is quite sufficient without a layer of straw.

The outside of the pit should be so constructed as to permit an issue of steam, which will steadily, although imperceptibly, escape. Those who have been accustomed to potatoes in pits will soon manage this part of the business. As for storing away apples in sheds, or any dry outhouses, this is not so particular an affair. They should not, however, be piled in huge heaps for fear of fermentation; however, all this depends on the amount of room available. If there be plenty of room, it will be well not to lay them above six to nine inches thick. There will be no occasion for straw, or other dry material, in this case; the only thing requisite will be to ventilate freely for about three weeks after housing, or until the sweating is over.

And now, as to the housing the superior dessert apples. Here we must recommend single layers as far as practicable. Some arrangement is necessary when these are brought to the fruit-room. They should be so placed, as far as possible, as not to need moving for a length of time; but where there is a great amount, as

well as variety of fruit, this is not an easy affair. Of course, in the consumption of the more early fruit, vacancies will be created, and this gives the manager frequent opportunities of re-arranging his stock. As principles on which to ground future operations, we should say, keep all early fruit, and those of somewhat uncertain properties, under the eye as much as possible. In most fruit-rooms there are some parts darker than others; and as it is not always convenient during the dark days of winter to light a candle in order to search for a few pears or apples, it is well so to arrange them so that the darker portions of the room are appropriated to such as the Glout Morceau, the d'Arenberg, the Beurre Rance, the Ne plus Meuris, &c. These, in the main, need little watching, or examination; whilst some kinds, as the Marie Louise, the Winter Neilis, the Althorpe Crassanne, &c., are apt to rot, become mealy, or subject to what has been termed "bletting." Such, therefore, must not be housed out of sight. The Winter Neilis is peculiarly liable here to begin rotting at the stalk-end about Christmas; and many a superior fruit suddenly becomes disqualified for the dessert table through this misfortune; albeit the other end is sound, and of the most exquisite flavour. For a year or two we fancied that the fault must be in the gathering; that the point of junction between the stalk and fruit must be more sensitive of injuries than most pears; since then they have all been cut with scissors, but we are still liable to this misfortune.

PEARS.—Here two distinct classes present themselves, those which may be called November pears, of which we have many good ones, and those which are peculiarly spring pears. The former are, for the most part, more tender in the skin; indeed, this arises in part from their early mellowness, and such require very gentle treatment. As instances, we may name the Marie Louise, the Aston Town, the Beurre d'Amalis, the Dunmore, Louis Bonne of Jersey, the Delice d'Hardenpont, the Fondante d'Automne, &c. These, although mostly what may be termed November pears, ripen, perhaps, in October, and some run into December. Be that as it may, they form a class requiring special treatment, and should not be mixed with the spring pears, about which there need be little ceremony until Christmas has passed. The autumnal pears should be kept well under the eye, and should have a softer bed to lie on. These will require almost daily examination; and it should be an established rule to look over the fruit-room twice a week from the end of October until Christmas, and at least once afterwards. Every mouldy fruit permitted to remain, assists in promoting an increasing contamination; and it is scarcely too much to say, that a fruit-room should be kept as clean as a dairy, minus the damp in the latter office.

The moving of fruits occasionally is beneficial, providing the *utmost care* is taken over it; not every one, however, may be trusted to move ripe Marie Louise or Winter Neilis pears. The mover should wear a pair of thick and soft gloves during the operation; changing the position of fruits facilitates equal ripening, and gives the operator a chance of detecting every blemish. All partially-damaged fruits should be placed with the bad side upwards, in order that decay may be immediately detected.

R. ERRINGTON.

THE FLOWER-GARDEN.

At page 374 of the present volume, is an essay, which it is very gratifying to an old gardener to read—I mean S. N. V.'s excellent letter about his failures. This is a new turn in garden-reading, but depend upon it, there is as much to be learned from a faithful report of any thing that we fail in, as from that of the most successful

experiment we take in hand. We gardeners meet with more failures than any other class, but as it is not fashionable to write about such things, we are called boasters, by some, for writing so much about our success; but fashions change, and we begin to change too, and show the two sides of the picture. I had a curious letter from London the other day, inclosing a leaf of a plant, in my way, which the writer said could not be bought in the nurseries; but this I could hardly believe, as I had seen it used in a beautiful flower-garden, a little out of London, three years since—that of the Duke of Devonshire, at Chiswick—and I had just put in about two hundred cuttings of it that week, to be used next season, for the first time here, in the flower-beds; but for other purposes we have had it for years, and I rather think that some visitor, who was struck with its novel appearance in our "wilderness," was the cause of the curious letter, though not the writer of it. At any rate, the plant must be got into the flower-beds of THE COTTAGE GARDENER; and a welcome addition it will be, as it is quite hardy, very easily propagated, and is in full beauty every day in the year, and is, if anything, more handsome in the winter than in the summer. It has recently garnished some of the handsomest drawing-rooms and dining-rooms in England, and there, in the glare of the candle-light, it has been mistaken for an artificial plant made out of frosted silver. Although I said that it is of novel appearance, it is not new; for Miller, in his *Gardeners' Dictionary*, says, that some people, in his day, kept it in the greenhouse; although it is hardy enough, as he proved, and although I say that it is in beauty all the year round, the flowers of it should never be seen. Linnæus called it an *Othona*, which it is not; but you will not meet with one person out of twenty, except a gardener, who can tell the name of it this autumn; and, what is more curious than that, or the letter either, no gardener out of a hundred calls it by the right name, although the next gardener might tell you all about it, from this description. Now, if I tell the name of this plant, the nurserymen will incline to pull my head off, as they threatened to do about the *Verbena venosa*, and others, because they had no stock of it for them to supply the orders; but out with it I must, at all hazards. It is the *Cineraria maritima*, or Sea Ragwort, a native of the sea-coast, round Spain, Portugal, and so on, along the Straits of Gibraltar, to the northern shores of the Mediterranean. The bloom and beauty of this most singular plant reside in every portion of it. No silk or swan's-down was ever half so soft, or a snow-flake ever more white, than the substance which covers every part of the plant. Viewed by candle-light, it might well be taken for frosted silver; as a border to a bed of *Punch* geraniums, on dry soil, we have nothing to come near to it in effect, and such effect is much heightened by planting as every third plant, a *White Ivy-leaved Geranium*. Let this white border be from a foot to eighteen inches wide, and kept to one uniform height all round, by pinching out the tops of such as rise above the stature wished—say a foot or so—then plant *Punch* or *Tom Thumb*, or any favourite scarlet, inside this ring, and the contrast is beautiful; but in all comparisons, with flowers at least, we must have three stages—good, better, best—tall, taller, tallest, and so on. The best and tallest plant to contrast well in the centre of a bed of scarlet geraniums is the *Ageratum Mexicanum*, or *Celestina*, as it is often called. The following arrangement is the very best that any one can make for a circular bed, a few yards away from the walk or the eye, in a recess, backed by evergreens, where nothing else is wanted to correspond: this silvery plant for the outside, as I have said; then some good scarlet geraniums in a belt, not less than thirty inches through, this belt should be made by putting in three rows of plants, each row to be of a different-sized plant, or let

us say the row next the silvery belt to be a foot high, the second row to be eighteen inches high, and the third two feet, and after a little growth the whole will make a sloping bank of scarlet, thirty inches, or three feet in the angle; and the middle should not be less than three feet through, of the *Ageratum*:—if all goes on well to the middle of July, nothing of the *Ageratum* is seen but the flowers, and no part of it should ever be seen in a flower-garden, if possible, but the flowers. Last year, and the one before, I had a hundred questions about the best arrangement for a single bed, by itself, in such and such parts of the garden, and this year I planted one exactly according to the above proportions, to see if it could be described from life, or actual being; and if there is any truth in the saying, that “what every body says is true,” this must be a beautiful thing, for every Friday, during the season, part of my business is to conduct visiting parties over the gardens, and not one party missed this bed, nor failed to make some remarks about it, so that I am quite confident in recommending it. It is good also as an arrangement for a large rustic or other basket—and baskets are endless sources for questions about how best to fill them. But I have not done with the silvery plant in the “wilderness” yet. The “wilderness” is a steep, sloping bank, close on one side of a long walk in one part of the garden here, and the bank is planted with all manner of things, the silvery plant among the rest, and, like the Venetian Sumach in the autumn (*Rhus Cotinus*), not one passes that way without pointing it out first. As a conspicuous point, in a dark recess, at a distance, in landscape, masses of large plants of this Sea-Ragwort, or silver-bush, would be invaluable. In large houses, where they have always some flowers or plants in bloom on the table during dinner, or in the drawing-room after dinner, I am told this is one of the best that can be used, if grown into good specimens in pots, more particularly in winter, and where the papering, or colouring, or window curtains are of a red, yellow, or crimson colour; and, last of all, the silvery plant is a good subject for a rock-garden—for the last five years a large plant of it stood out in a hollow block of wood here, a yard from the ground, with no more soil than would do for a Cactus, or a Houseleek, and it was never watered, so that it must have the power of withstanding dry summers on rockwork.

I shall now compare notes with S. N. V., beginning at page 374. He has found the sweet-scented geranium (*graveolens*) hardier than the scarlets; and so it is, and so are all the wild species that I have tried. Every one of them stands more hardship than finer sorts got under cultivation; the *Fair Helen* is as hardy as any of the race, and *Prince of Orange* is the next hardiest. These three would only require a single mat over them to keep the frost from them, if they were planted against the wall. On dry soil, Mr. Rivers's plan of packing the surface of the beds of Scarlet Geraniums with six inches of moss, will preserve all the kinds of scarlets, as I have proved; but there is no advantage in the plan next season, as respects their flowering, and they can always be preserved dry in-doors in winter. *Zauschneria Californica* I took all up last April, early in the month, and divided the roots a good deal, then planted them, and several beds and rows of it in different parts of the garden are much better than I ever saw it before. That seems the best way to get it to flower very late in the season, and to keep down the profusion of leaves. I have already said how well it does with the *Fuchsias*. *Salvias*,—bad luck to them!—I was never so much deceived as with the *fulgens* this season. Last autumn, before the frost, I cut down a fine bed of them, and thatched it, and was dreaming all the winter how the Prince would be surprised to see them so fine at that early period, because they would come in so early;—early, indeed! All I will say, however, is that they will

not do at all for beds left out this way. Among shrubs, or on a wide border, a plant here and there, which stood the winter, is all very well. *Veronica speciosa* requires just to be kept from the frost with us; it blooms finely, and seeds abundantly. If grafted on the old *Veronica decussata*, which is quite hardy, I have no doubt it would stand our ordinary frosts, because the growth would be rather checked on the *decussata*, and, therefore, the shoots would get better ripened. Try all the new *Veronicas* this way; and by all means try to cross them, to get fine hardy bushes. Have any of our readers ever seen *Veronica decussata* in flower? I never did; but that is the one to turn the constitution of *speciosa* and others, so as to enable them to live on the banks of the Beaulieu, about the falls of Kilmorack, which the Countess Neuilly and the princes so much admired the other day, and where I first learnt to catch salmon flying in the air. *Verbenas*: all the very dwarf creeping ones, and particularly the scarlets of that character, are immensely improved when they live out a few years. I once knew a plant of the old *melindris* which stood out six winters. It was a real beauty. *Verbena pulchella* and *pulchella alba*, with *Sabinii*, live out here year after year. *Calceolarias*: I have one of *corymbosa*, the sort which nature, or, rather, art has produced, as it were, on purpose for the Shrubland Gardens, in a block of wood, in the “wilderness,” where it stood for many years, and once endured about 30° of frost uninjured,—it always blooms the whole season. I cannot account for S. N. V.'s calceolarias going off the bloom so early, after standing out the winter. *Fuchsias*, also, are as if they were made on purpose for these gardens. They are no trouble, no cost, and yet they are the admiration of all who see them. *Gracilis*, *Riccartonii*, the old *coccinea*, and those newer ones which take after these, should be cut down close to the ground every year, otherwise they lose much of their beauty and usefulness. The *globosas*, and all the large new ones, on the other hand, go on improving from year to year, where we keep the frost from them. Blue *Anagallis*es are touchy things, and from his account of them, I can tell the kind of soil in the garden of S. N. V. They answer better on strong loam not enriched with anything. *Isotoma axillaris*; a beauty. Never sow a seed of it; never put in a cutting of it in the spring, and never keep an old plant of it over the winter; and my word for it, you will be perfectly satisfied with it. Put in a lot of cuttings of it immediately. *Kentish Hero Calceolaria* is perfection with us every year, but nothing is too rich for it; the soil, also, should be strong, and if the situation is a little screened from the sun and high winds, all the better. Fancy *Antirrhinums*, unless the soil suits them particularly, are not worth the trouble they give. Sow seeds from the best old sorts at the end of June, prick out in August, and plant out the following spring, and do not allow them to seed. This is the right way to have one's Snapdragons as fine as Calf's-snouts. D. BEATON.

Since the above was written, we have received the following from a valued friend relative to “the silver plant” mentioned by Mr. Beaton.

“*Cineraria maritima* is a most useful plant for vase decoration both in-doors and out, excepting always that it may not be brought into contrast, either with stone architecture out-of-doors, or with light-coloured hangings in-doors. We have seen it become a very striking object on the turf, and especially when, in walking along, the eye catches it between itself and a fine bright bed of scarlet or blue. But amongst the most charming things we remember seeing, we cannot forbear mentioning two fine pyramidal plants in the windows of a handsome drawing-room; during the day they were beautiful, supported as they were on either side by the graceful folds of the crimson drapery; but far more so by night,

when the said curtains were closed behind them, and the room lit up, our pets then stood out in bold relief against the bright back-ground, and had the appearance of nothing less than frosted silver. I must mention that the plant is extremely good-natured, and will stand, without grumbling, almost any amount of close custody. It is better, however, to take them out occasionally, and give them a few days rest in a habitat more congenial to vegetation than is that of a dwelling-room."

GREENHOUSE AND WINDOW GARDENING.

COMPARING NOTES.—A gentleman not long ago expressed his surprise that the different writers of *THE COTTAGE GARDENER* should, upon the whole, steer so free of each other's craft, inasmuch as the departments run so much into each other. I confess, that not seldom, after my mind was made up to a certain subject, the arrival of the Thursday's issue has placed me much in the same position as a dog leisurely and agreeably contemplating a juicy marrow-bone, when suddenly a canine brother whisked past, and with tail and head erect, strode off with the prize. If, from a coadjutor starting the identical matter I had proposed for a text, a spice of regret was felt, from the necessity of looking out at the eleventh hour for another, the slight disappointment was generally exchanged for pleasure, from the coincidence of view, or the superior information unfolded. Let me, then, just glance in a random manner at a few topics alluded to by other friends, or which deserve noting.

Planting-out in Pots.—This, so far as I recollect, was the mode employed when first the plants of the greenhouse were made subservient to flower-garden decoration. Gaps formed from the cutting-down of herbaceous plants out of bloom, were supplied with pots of Myrtles, Geraniums, Calceolarias, &c., which were again to be taken up and replaced in snug quarters before the frost came. The beauty which such plants singly presented, gave rise to the idea of combining them in groups, and thus changed the whole style of flower-gardening. When first attempted, so far as I can judge from recollection and experience, the system described by Mr. Beaton, as adopted by Mr. Mcintosh, was almost entirely followed. In low situations, much north of the Forth, in Scotland, it is the only plan that can be adopted with success, in the case of all the finer and tenderer plants, whether used for the flower-garden or the balcony. The late spring and the early autumn fogs and frosts, give less time for growth than in the south, and there is even, during the summer, a greater disposition to the production of leaves than of flowers. I found, from several first-rate gardeners, that the change of the seasons had been so great within a few years, that, unless with the hardier plants, they could do little with the grouping system. Here, in the south, the vast numbers employed would render pots a serious consideration, and the room necessary for wintering them still more so. In the case of our balcony friends, these are matters of less moment. Both for inside and outside the window, I have previously recommended grouping the plants in baskets and vases, instead of exhibiting them singly in pots; and I would like, if I could, to tell whether it was preferable to turn out plants into baskets or vases, or to plunge them *in*, or at least cover them over with, green moss. Each method has its advantages, and counterpoising disadvantages. By planting-out, you save trouble in watering:—by keeping in pots, you can easily remove an exhausted decaying plant without disarranging the others. When the basket or vase is small, to obtain the greatest maximum of success at the least minimum of trouble, I would recommend to plant

in the basket or vase. When the basket, or vase, or box, is large, say three or four feet in diameter, or as much in the square, the most successful mode will depend, first, upon the plant employed, and, secondly, upon the character of the season. For instance, plants that require free growth to bloom freely, such as most of the shrubby Calceolarias, will thrive best if planted *out*. On the other hand, plants whose free flowering depends in some measure upon checking their luxuriance, such as most of the succulent Geraniums, will succeed better in pots, but will require more water, unless plunged firmly in moss, or any other absorbing-of-moisture substance. Then, again, in a dry bright summer, whether in beds or boxes, these plants will do well planted out; while in dull and damp seasons, the more cramped they are at the roots the better. As a whole, then, even for beds on a balcony, planting-out will save trouble in watering; but if the soil is very rich, or the plants are free growing and succulent, or the season should be dull and drizzling, you will have to check luxuriance by cutting the roots, by inserting a sharp knife into the soil at a few inches distance, less or more, from its collar, and according to the size of the plant, cutting half-way round at a time; or, what would be preferable for the uninitiated, removing a considerable portion of the larger succulent leaves, and any unnecessary young shoots. The latter is quite as effectual for checking luxuriance and inducing a flowering habit, as the former. I first learned this notch, many years ago, by seeing a very low wall, under the care of Mr. Caie, at Bedford-lodge, so smothered with the bloom of the common Nasturtium, that scarcely a green leaf was to be seen. Such wholesale disleafing would be ruin to many plants, but in the case of those with succulent herbaceous stems, and growing rather freely, the operation, resorted to in moderation, checks luxuriance, and promotes flowering. I have been obliged to remove leaves pretty freely from vases of Scarlet Geraniums this season, though planted in soil none of the richest. One advantage of turning out the plants in pots, in the case of those who do not grow on a fresh stock, is, that the plants are more easily kept afterwards than if taken up out of the soil and repotted. Where a box or vase of the Scarlet Geranium exists, and the plants have been planted out, and the vase can be dispensed with during the winter, the best mode of all is to place vase, Geranium, and all, into some snug, out-of-the-way, dry corner, where frost will not reach them; and, provided the surface of the soil is covered with something to prevent the soil being thoroughly dry, never think of slaking their thirst until the stems begin to bud afresh, as spring again comes round. In all such cases, preventing the drying of the soil is much preferable to any watering at all in winter. Whether planted out, or plunged out, we hope that, before long, small numerous red pots will be banished from balconies and the front of mansions. Sometimes we come upon beautiful gardens, everything managed well, a magnificent mansion, splendid groups of beds over a lawn at no great distance from the doors or windows, while, as a burlesque upon the whole, by the unseemly contrast between the grand and the lowly, there is a little heap of small plants in small pots, clustered together at the entrance, or what is more unseemly still, elevated and stilted upon a little green-painted stage in a similar place, constructed for their particular reception.

Failures.—*Salvia Patens*.—I have several times spoken of these in the admiring strain, for specimens and beds. As a blue we have got nothing to equal it; and though the individual flowers are of no long duration, there is such a succession of them, that the plants generally present a furnished appearance. My specimen plants have not been so good this season as usual, though, until the other day, they have been very fair, from the begin-

ning of June, with no more trouble than cutting away the exhausted spikes, and giving several surface-dressings with old cow-dung, &c. But those in beds have completely disappointed me, though, heretofore, they have always constituted a good and prominent feature. Day by day they have continued to wither and dry, or shrivel up, though from no want of moisture. Old plants and young plants have gone just alike, and, what is very tantalising, only one or two at a time. A plant would be flourishing one day, the next its flowers all drooping, its leaves all yellow, and yet nothing seemed the matter at the roots. The plants have been treated in every respect as formerly, and they are planted in similar soil, though not in the same place, as last year. There is only one thing I can think of. In July they were watered with black water from a farm, but so were *Salvia fulgens*, *Calceolarias*, &c., near them, without any prejudicial effect. Much as I like this *Salvia*, I am somewhat doubtful of placing it again in such a conspicuous place, without being certified that no one else has suffered in a similar manner.

Again, *Double Feverfew* has several times been recommended for boxes and beds. It is very pure white, very double, the flowers almost the size of half-crowns, and produced in great abundance. For several seasons I have had it splendid from towards the end of June to the end of October; but this season a majority of the flowers were browned before the end of August, and so simultaneous was the change, that thinning out the discoloured flowers was like washing a blackmoor white. They are now scarcely passable after considerable patchwork. Now I mention this failure, because I think I can prescribe the remedy. I formerly used young plants—this season a great proportion were old plants divided. It generally stands the winter with little or no protection; when a splendid bed, therefore, is desired, cuttings should be placed in a gentle heat in the end of March or the beginning of April. They strike fast, and when pricked out and hardened off may be planted out in the beginning of May; previous experience would lead me to say that such plants would keep on until at least the middle of October. In the neighbourhood of London, where a white flower is desirable, old plants divided should be used, and they will bloom brilliantly until the middle of August, or thereabouts. If it were wished to continue the bed, young plants should be struck in the middle or end of April, planted out into fairish soil, and lifted and transplanted when the older plants were removed. From its fibrous roots it may be lifted at almost any time.

S. N. V.—I am so much obliged to this fellow-labourer's remarks, that I gladly add the following:—*Blue Anagallis* has grown and flowered well with me; the dry, sunny autumn has just suited it. It is improved by being mixed with the *Lobelia gracilis*, which firms it and keeps it up. For a vase or basket this is beautiful.

Heliotropes have bloomed very well, but the growth has not been so vigorous. *Senecio elegans flore-pleno* should be treated like a marsh plant, in a dry autumn. *Ageratum*, with us, instead of not flowering until the middle of August, blooms freely in June. It is a compact dwarf grower, propagated by cuttings—a capital thing to move about, and may be lifted and planted at almost any time. *Kentish Hero Calceolaria*—to prevent the flowers getting down among the leaves, of which, by the by, there are generally very few—should be planted thick enough to keep themselves up, or the bed be stuck over with brush-wood. For summer purposes, this is still king for vases, baskets, and beds, but of this and several other *Calceolarias*, I may have some notes, "some other day." Some *Calceolarias* that stood the winter were magnificent in early summer; but, as a general rule, those that bloom profusely at an early period require considerable trouble in removing flowers,

rich top-dressing, and plenty of water, to keep them at all fine through the autumn. R. FISH.

HOTHOUSE DEPARTMENT.

EXOTIC ORCHIDACEÆ.

PLANTS THAT THRIVE WELL IN POTS—(Continued from page 358).

SCHOMBERGIA CRISPA (Curled-flowered S.); Demerara. This genus of orchids is a remarkable one. The plants have much the appearance of some giant species of *Cattleya*, but this particular species resembles the noble *Lælia superbiens*, and when not in flower it requires a well-practiced eye to detect the difference. When in flower, the veriest tyro in orchid-culture would perceive they were two distinct species. We have long, however, suspected that the *Lælia* is a sort of stepping-stone between the two genera, and might, without any far-fetched or deeply-studied character, be transferred to the family now under notice. The flowers of the *Lælia* are produced on very long flower-stems, and are arranged in a close panicle at the end, exactly in a similar way to those of *S. crispa*.

S. CRISPA has large pseudo-bulbs, with two, or sometimes three, long, rather thin, leaves on the summit. The flowers are produced on stems frequently five or six feet long, on a short panicle; they are of a brownish-yellow, much crisped or curled at the edges; the lip is white, striped with pink, and edged with pale yellow. Each flower is large, measuring two-and-a-half inches across. It has a slight perfume. Desirable. 42s.

S. MARGINATA (Margined S.); Surinam. The pseudo-bulbs of this species are shorter and thicker than the preceding. The flowers are of a deep orange, shaded with red; the lip is pale lilac; the whole flower is margined or bordered with brownish-red,—hence its specific name. This is a truly fine plant. It is sold in the markets of the West India Islands under the name of the "Spread Eagle," from a fanciful miniature-resemblance of the flower to that noble bird. The flowers are handsome, and produced on somewhat shorter stems than *S. crispa*. This plant is well deserving of cultivation in medium-sized or large collections. 42s.

S. TIBICINIS (Cow-horn S.); Honduras. The pseudo-bulbs of this species are rather remarkable; they are hollow when old, and blunt at the apex. The natives cut them off, and form them so as to be able to blow through them, and produce a noise like the horns of a cow when blown through; hence they call it the cow-horn orchid. This species has the longest flower-stems, frequently from eight to nine feet; they are of a deep pink colour, spotted with white on the outside, and with rich brown-red inside. The lip is white in the centre, rose-colour at the sides. It has a lobe in the middle, of a fine bronzy-red colour. Like all the genus, the flower springs from the top of the last-formed pseudo-bulb, and generally flowers about the month of June. Equally handsome, and worthy of cultivation with the rest of the genus. Good strong plants will cost 42s.

S. UNDULATA (Wavy S.); La Guayra.—This, very possibly, is but a variety of *S. crispa*. It is sometimes named *S. violacea*, from the deep colour of the flowers. Sepals and petals of a light purple, waved or curled at the edges; lip violet-coloured; flowers much larger than those of *S. crispa*. Flower-stems eight or nine feet long. Mr. Mylam, gardener to S. Rucker, Esq., flowered and exhibited this new and rare species or variety, at the June show at Chiswick. It was beautiful, and much admired. Very rare. 84s.

Culture.—While these plants are young, or newly imported, or in a sickly state, they should be grown on blocks of wood; but when they produce plenty of roots

in the air, and have made middling-sized pseudo-bulbs, they should be potted. The best plants we ever saw of them, were grown by Mr. Basset, gardener to R. S. Holford, Esq., at Weston Birt, Gloucestershire. They were grown in the simplest stuff imaginable, nothing, in fact, but broken crocks. The pots were wider than usual at the top, and the plants were set, as it were, in the midst of the crocks, care being taken that the buds at the base of the pseudo-bulbs were left uncovered. The roots were running about on the surface, and amongst the crocks, quite freely and healthily, and the pseudo-bulbs appeared to grow stronger and stronger each successive season, the plants had flowered and appeared to be quite happy and at home. We are trying this somewhat novel compost, and our plants are evidently improving. Yet we do entirely depend upon this method, for we remember our friend, Mr. P. Don, tried growing orchids of all kinds, in crocks, and found it did not answer. Therefore, we grow part of our stock in a compost of very fibrous peat, half-decayed leaves, chopped sphagnum, broken pots and charcoal, all mixed together, draining extra well, and raising the plants up on a hillock in the centre of the pots on the compost, securing them well till they get established with stoutish sticks. These precautions are taken to prevent the roots from rotting at the ends, which they are very apt to do, if cultivated in a careless or common way. They will grow on blocks best, but in that way do not obtain sufficient nutriment to produce large pseudo-bulbs, without which they will not produce flowers. As they are natives of warm climates, they require great heat when growing, even as high as 80 to 85 degrees by day, and 75 by night, but when at rest, 10 or 15 degrees lower will be sufficient.

T. APPELBY.

(To be Continued.)

FLORISTS' FLOWERS.

MR. GLENNY ON FLORISTS' FLOWERS.

THE comments which appear under this head are displeasing to some persons, but only to those who would be benefited by contrary decisions. We regret giving annoyance to any one, but we must pursue our honest course without regarding anything but the attainment of truth. We shall continue to select for our readers what we consider the best of everything, and if they limit their purchases to the varieties we recommend, no matter whether in fruit, flowers, plants, or vegetables, they may rest assured they will waste but little upon bad things, and miss few, if any, good ones. When, first and last, considerably more than one hundred *Dahlias* were actually advertised last season as first class varieties, what was the amateur to do? He could not rely on the vendor's description, because all were said to be *good* form, *fine* this, *splendid* that, and *grand* the other, and more than half were warranted to be the best in their class. What could we do but honestly select a score or so of the best, fairly describe them, and leave the public to "do as they list?" May we not, with satisfaction, point to the result? Has our description proved incorrect? Which of the hundred we refused to notice at all has proved worthy of a place in the garden of an amateur? All we regret is, that there are persons who, notwithstanding our caution, buy everything we describe as if we adopted them all; whereas we only describe them as the best among many bad ones, because they are to be put out as first-rate varieties, and have, perhaps, had sundry certificates; but our descriptions are not all alike tempting, though they are alike just. A dead set, it is true, has been made at the *Dahlia King* by some. Great pains have been taken to show it in a bad state, to run it down; but, notwithstanding this, it has proved itself

the most perfect model in cultivation, although it does not attain the size which a vitiated taste seems to demand; and we have been doomed to see, all through the season, head prizes run away with by coarse specimens, which were bad in the outline, low in the centres, and quilly in the face, although evidently submitted to all manner of poking to open their puckering petals, and a system of dressing to which no gentleman would submit. If the respectable amateurs do not by some means check this, the *Dahlia* will decline. Whether this check is to be by making new classes with a limitation to the size, or by the taste of properly-constituted censors, we are yet to guess; but there is neither art nor credit in growing large flowers, *size is invariably attended with coarseness*; and unless those who wish to see their gardens neat, and their plants natural, their borders free from props and tables, shades and inverted pots, can devise some means of exhibiting flowers for compactness, symmetry, and form, instead of size, they must submit to be beaten by flowers grown large, but which have no other recommendation. The present season introduces us to several other flowers, which may not be acceptable to the dealers in monsters. *Dr. Frampton* and *Sir F. Thesiger* are models in their way; but they may not please those who seem to have but one notion, and that a coarse one. *Dr. Frampton* is especially a model—we have already noticed it—a light flower, as complete as *The King*, but without the King's great fault, a reflexed petal. Still, unless we can break the neck of the washing-tub system of showing, these models will be useless. *Sir F. Thesiger* is one of the best rose-colours in cultivation; there is no pale, sickly centre, no fading outside; it is a dense colour from centre to base, without a shade of difference between the unopened petals in the middle and the under row of all. We only mention these things in illustration of our objections to the barbarous system of judging *Dahlias* by the foot. The very best of the large flowers in many stands have had petals standing out, or at least uncovered, more like the bowls of teaspoons than petals of flowers; and we do hope and trust that if vulgar tastes are to be pampered by the exhibition of mops, Societies will also cater for the true florist, and make a separate class for form and symmetry, or secure judges who will uphold the true principles of floriculture. We are fully aware of the unpopularity of small flowers, and of the stand which will be made against them by people whose soil and situation produce them large, but unless we are prepared to abandon form, doubleness, symmetry, and compactness, something must be done, otherwise we shall soon be divided into two classes of amateurs: one class who can depend on each other for showing with taste and fairness *naturally-grown* flowers from their own gardens, and another that rely upon all manner of trickery, dressing, and disguising, for their success. We are exceedingly anxious to see gentlemen who have abandoned the pursuit, and deserted the exhibition, induced to return to it, but it cannot be expected they will submit to compete with those who resort to unfair means to obtain prizes. Hundreds who entered into the spirit of showing have given up growing *Dahlias*, except as border flowers; and unless exhibitions can be brought back to the indulgence of a wholesome and honourable emulation we shall lose many more. Dealers must uphold the principles of floriculture, and not pander to coarse tastes, before honourable men will venture to show. Let any reasonable man ask himself what situation he would have been in had he bought all that have been warranted to be good? His *Dahlia* bill alone would have been sixty pounds, and he would not have had five pounds worth growing the next year. It will take a little fortune to buy only those which have had certificates and commendations from Societies; and when bought, not one in three would be found so good as we

possess already. If, then, we venture, at the close of the season, to point out the few that may be worth buying, we may curtail the number of bad ones purchased, but we shall add largely to the sale of those worth an amateur's notice. We are daily receiving a number of seedlings, and shall make strict notes of all worth sending out; but as those who have any thing really good are sending us blooms over and over again, to prove constancy, while a vast number of seedlings are only now coming into bloom, we reserve positive opinions while there is a chance of a flower retrieving (what if we decided at once would be) an unfavourable character, we will not hastily condemn. But we confess that we shall not give size a single point in a seedling, nor shall we mention as first-rate a flower that wants an hour's torturing to open quilled petals, to bend down those on the face, to make the eye appear naturally higher. These tricks with seedlings are unworthy, simply because they disguise a flower and deceive the buyer. If a flower is naturally quilled and sunk in the eye, it is comparatively worthless. How is it that one man can show a flower which hardly anybody else can produce fit to be seen? Simply because he is clever at dressing and distorting. We know we shall have respectable cultivators with us in resisting and opposing such practices, although just now there are too many interested in supporting them. We have seen a flower, totally unfit to show, mauled about with the tweezers until an open eye has been closed, and quilled petals have been, by great patience and application, opened. This is not floriculture; it is tricking, and most unworthy; for the flower that wants it is useless to a gentleman who is deceived into buying it.

HOLLYHOCKS (*W. P., Morpeth*).—The numbers were mismatched, so as to be no guide, but there were three distinct colours. The lightest rose-colour, was a noble, but rather loose flower, and guard petals stretched out too far all round. The other rose, darker, was a better flower, and more compact centre, as well as in better proportion, and thicker petals. The dark flower the best, and has the advantage in thickness and compactness; all three may be grown. (*A. M., Leeds*).—Not one of the ten is an acquisition as a show flower; but No. 5, being very thick in the guard petals, may be seeded, and something good be the produce. (*J. J.*).—No. 8 is pretty, but too small, if it be a full-sized bloom of the plant; but if not, or if the plant be weak, grow it better; the rest are useless.

GLOXINIAS (*T. W., Middleton*).—No. 14, red with darker throat, No. 7, blush-white, with crimson throat, are the most remarkable of the whole number, and on comparing with those most in the way of them. The rest are pretty in collection, but not sufficiently distinct to be propagated. All are small-sized compared with the sorts we possess.

JUDGES' DECISION. *W. R., of Staines*, Asks how it could happen that a cottager's stand of cut flowers, comprising one Stock, two Snapdragons, a few common Pinks, some Canterbury Bells, with some Burridge, was placed before another which contained Ten-week Stocks, flowers from Pelargoniums of sorts sent out by Beck and Forster, Perpetual Roses, Verbenas, Ranunculuses, and Scarlet Pelargoniums? We cannot tell; perhaps because the judges suspected such flowers were not his own growing; perhaps because they had travelled a long way, and were stale; but that there was a reason, and a good one, we have no doubt, besides which, we do not believe in the statement being a fair one. As we are told that the answer will oblige the writer and many more, we have complied with the request.

PANSEY (*J. M.*).—The Pansey is a good self, but exhibits no novelty. Packing in wet moss destroyed three blooms out of the four, soaked out the colour, and actually stained the moss. Layers of leaves and Pansies alternately, will travel a thousand miles.

SEEDLING DAHLIAS AT SHACKLEWELL. *Laura Lavington*—A fancy flower of an odd colour, flat in the face, solid, but rather sunk eye, full size, moderate outline; an acquisition from its novelty. *Sir F. Thesiger*—A dense rose-colour, of rather under average size, well rounded on the face, and centre well up, petals of good substance, outline good, general form excellent, and symmetrically built. *Dr. Frampton*—Already noticed as a model, rather smaller than medium, beautifully edged, and very double and symmetrical. *Triumphant*—A red, full-sized; petals narrow, and rather ribbed and quilled, noble face, centre high. *Nancy*—Not so good by much. *Lizzy*—An edged-flower, like some we have had, and not better. *Miss Matthews*—Scarlet and white fancy; better than the generality of the class, numerous as it is. *Miss Ward*—Yellow and white fancy; apparently a safe one, but no great improvement. *Wonderful*—A carnation-striped flower, curious, but like all this class, no improvement to a stand. *Louisa Glenney*—Yellow, pretty, but not an advance. *Miss Creed*—Yellow and white fancy, not so good as *Mrs. Hansard*, nor so fine as we have seen *Lady Cullum*, though she is rather an uncertain lady. Many others there were, of which it is hardly fair to speak, as we shall have better opportunities of seeing them. To the credit of the management, the test of seedlings was six blooms, three having been, much to the injury of the amateur, the number admitted at the Surrey Show.

DAHLIAS (*E. D., Portman Market*).—*Louisa*, a dark ruby or garnet colour, double, symmetrical, and promising, but low in the centre. We should like to see blooms of this again. *Constancy*, a purple flake or stripe, the best in its class, though not all we want.

HOLLYHOCKS.—So many of these have reached us that it requires no little pains to decide which are the best of these several classes, because it is clear that not more than one of a colour can be pronounced best. Mr. Parsons has some very striking, which we shall notice, particularly for their novelty and quality. Mr. Bragg has been fortunate also; and, indeed, as many as eight or ten cultivators have added something to our rapidly-improving collection of this noble border flower.

ANTIRRHINUMS pour in upon us in considerable number, without giving us one worthy of notice.

MIMULUS *Gigantea* (*Smallbone*).—Monstrous flower, and as good as any of the family in form. It will suit everybody who grows the plant, but a *Mimulus* must not be let out at a dear price. They are rapid increasers, and a new one ought not to be more than double the price of an old one. In fact none of them give more than a few flowers of the full size, they degenerate on the lateral branches.

PETUNIAS (*J. B.*).—No. 7 seems a little thicker than usual, and not a bad form; the rest are of no service.

VERBENAS (*N. N.*).—All of the old school, quite useless among the improved varieties. Our readers may depend on us when we say, that it is labour in vain to save from any but the very best; for even then they will have ten worse for one as good, or better.

PANSIES (*M. D.*).—No. 2 and 4 may come in good character, instead of the undefined present state. They appear like good things out of condition, as, indeed, all are at this time of the year. The others are useless, and cannot come good.

Every body who desires our opinion on *Dahlias* should send specimens without delay; very little has been seen yet that a journalist can honestly recommend.

FLORISTS' FLOWERS CULTURE.

THE PINK.—This is generally a great favourite with florists, more especially amateur florists, and most deservedly so, for it is a beautiful flower, very fragrant,

requires no protection in winter, is easily managed, and as easily propagated, and lastly, is not expensive. All these are characteristics that especially recommend the Pink to our favourable notice and best attention, in cultivating it carefully and well. We propose on this occasion to detail—1st. The best soil, including situation. 2nd. The best modes of propagating it; and 3rd. The general management throughout the year.

Soil and Situation of the Bed.—The best situation to grow the Pink in, is, where choice can be had, the slope of a bank, or even the top of a middling-sized hill, where the bottom is dry and rocky. This situation will answer much better than a low one, because the early and late frosts do not prevail so much on an elevated situation as on a low one. This fact is well-known to florists, especially the growers of the Dahlia. Frequently have we seen them destroyed early in September, where they were grown at the bottom of a valley, whilst those growing fifty or sixty feet higher escaped scatheless. Now, though the Pink is not so tender as the Dahlia, yet the difference of temperature between the hill and the valley affects even this comparatively hardy flower pretty considerably, as the American would say. Again, the situation is of importance, in consideration of the root. If moderately elevated, it may, if of a wet bottom, be more easily drained, because there would be a better descent for the superfluous moisture, especially in a wet season. If possible then, search or look out for the right sort of place to grow this fine, elegant flower in. Having obtained this, examine the soil, and if not naturally of good quality, and not more than three years under culture for a florist's or amateur's gardening, it is well. The Pink, to grow it fit to be seen on a stage, requires a generous soil, moderately manured with thoroughly-decayed stable litter. This, if the soil is good, may be laid upon the bed intended for Pinks two inches thick, about October, and it should be immediately dug in deep, and the soil well mixed with it. To accomplish this well, it is of advantage to dig the bed or piece of ground two or three times over. This does good, not only as a means of mixing the soil and manure well together, but it pulverises and ameliorates

the soil much, by exposing it from time to time to the influence of the air and heat of the sun.

We once knew a very successful florist in Yorkshire, who grew the Pink remarkably well in his day, and the only manure he used, when we knew him, was *old thatch*. This, he always said, suited the Pink better than any other kind of manure he ever tried—but then, again, the situation had a good deal to do with it. His garden laid low, and his natural soil was heavy loam. The old thatch served not only as manure, but as a lightener of the heavy soil. On a dry hilly bank, or even an elevated plain, this manure would be found too light and open, the stable-dung would suit better. If the soil is heavy, and the situation low, it will be necessary to adopt measures to improve it. Where expense is no consideration, the soil had better be entirely removed, and the bottom of the bed be well drained, then bring in some good light loam, the top spit of an old pasture that has been laid up, and turned over and mixed with dung twelve months previously. Raise it from four to six inches above the natural level of the garden, keeping up the edges either with long slates or boards. In this bed, so drained and raised, they will thrive and flower satisfactorily.

Great care and attention must be bestowed upon this new soil, in diligently looking out for that pest, the wireworm. A quick, careful eye will detect the most of them during the operation of turning over the soil, from time to time. Let not our amateur friends think this of little consequence, or a matter that may be omitted, or be slightly attended to. They will find to their cost that the enemy will be active in search of their best Pink plants as soon as they are planted, and will eat their way into the very pith and marrow of such plants as they meet with, and the mischief is not perceivable till the plant is quite destroyed. We cannot press this matter too much upon the attention of growers, especially young ones, or new beginners; old hands are wide awake on the subject, and will watch with the most jealous care for this insidious enemy, and destroy him without mercy.

T. APPLEBY.

(To be continued.)

MISCELLANEOUS INFORMATION.

ALLOTMENT FARMING—OCTOBER.

POTATOES.—Our pen turns almost instinctively to this valuable root, which, in spite of the disasters which have attended its culture of late years, may still be termed the poor man's stay; long may it remain so. Still, we would advise every poor man to endeavour to wean himself from a sole reliance on it at his own table, inasmuch as it is, perhaps, possible, that the use of other roots may be one day forced on him; and in such an event, it is easy to foresee how much more readily those who practised such provident forecast would be able to adapt themselves to their altered circumstances, than those who pertinaciously adhered to this one root alone; which is at present too much the case with thousands. As to the utter extermination of the root, we do think it sheer nonsense thus to conjure up and meet evils which can scarcely happen. Which of our vegetables that endure the open air in summer in this country have we ever lost, whether indigenous or foreign? The most fatal thing of the kind we remember in our day, was the rapid decay of the Oriental Plum trees, which happened some forty years since; some kind of so-called blight injured most if not all, the trees in this island; but still the Oriental Plum is surely not exterminated.

We would have every cottager, and especially our amateurs who have leisure, raise seedlings every year; for although seedlings have suffered in common with established kinds from the disease, there is no questioning the fact, that superior cropping powers are possessed by the seedlings in

general. Of this we have been a constant eye-witness during the last twenty-three years, living, as we have done, in a district so noted for potatoes. In this quarter, during that period, several kinds which were in their day considered perfection, have come and gone, no one knows how, each in its turn ceasing, after a given period, to prove remunerating. In those days we had the old *Red Apple* in perfection, the *Blue Roughs* or *Perrins*, the old *Black Potato*, &c., &c.; these are all gone, and it is easy to trace in Cheshire, amongst the existing crops, various modifications of these types; very many of the newest kinds carrying unmistakeable signs of renewed vigour, through the agency of the *Scottish Pink-eyes*, introduced subsequently. So now we have as local names *Ink-eyes* as well as *Pink-eyes*; also *Pink-eye-Farmers* and *Ink-eye-Farmers*, and these respectively, no doubt, crosses between the Scotch pink-eye and the *Farmer's glory*, or *old ox-noble*, and so likewise as to the blacks, from whence have sprung the *Ink-eyes*. However, we must not speculate too much, real business demands our consideration.

Let us first advise, that extra care be taken in storing potatoes. Fermentation must either be avoided or provided for, that is to say, an escape for the damp air, which is sure to be generated. Those who possess outhouses, or sheds, will do well to throw them over the floor about four or five potatoes deep, covering them with straw or old cloths in order to prevent greening. The latter advice must be particularly attended to, and the place should be kept as dark

as possible; no potatoes will long retain their fitness for the table if exposed too freely to the air and the light. Under present circumstances, there can be little doubt that much hand-picking will be necessary, especially during the first five or six weeks after getting them up; and to open pits and turn them in such a situation is very tedious work. Besides, the confinement of the fermentative process, in spite of chimnies and other provisions for escape, is by no means desirable. The potatoes should be taken up when dry, by all means, and instantly removed and covered up from the air. All potatoes for seed should be selected at taking-up time and kept from the common stock. Any outhouse floor will do for them, light need not be excluded, and they will lay, if needs be, six inches deep for many weeks. A shed, or room, on the north side of the building is best for them.

WASTE VEGETABLES.—From this time until the middle of November, there will, probably, be more refuse matter from the allotment or cottage-garden, than at any other period. All the cabbage and green tribes, the mangold, carrots, &c., produce foliage which is of service to either cow or pig, to the latter of great use, especially when swine are fattening on meal or other dry meat, as the vegetable refuse tends to keep the bowels of the animals from a state of constipation. Pigs are awkward animals to "doctor," and above all things constipation is to be avoided. Let the cottager, therefore, assiduously collect all the refuse he can; greens, mangolds, &c., are constantly yielding something after this period at the lower part of their stems; tier after tier turn yellow, and as soon as the least discoloration appears it is time to use them up. This business will be of a continuous character until the middle of November.

THE VARIOUS GREENS.—"Soiling-up" is one of the main points of autumn-management; indeed, almost the only thing that can be done. Cabbage, and all the later planted greens, will, perhaps, require hoeing through; this should be done when dry, if possible, and the soil should be well chopped. A plot of Cabbage should be got out in the first week from the August sowing, if a spare piece can be found. If no eligible plot offers, the business must be done in the early part of February; only a sufficient quantity must be "pricked out" now to accomplish it.

Let all such "pricking out," as gardeners term it, (which simply means planting thick as a nursery whence to draw for transplanting), be done betimes on soil of moderate character. This is far better than performing the same later, on rich soil; the former plants are hardy, the latter are liable to suffer exceedingly in the event of a severe winter. This maxim applies to Lettuces, and, indeed, all other autumn-transplanted stuff.

HOUSING ROOTS.—This is early to talk of such proceedings, but the fact is, advice is better by far a month too soon than one day too late. Onions, we suppose, may be placed on this list, and these require to be *very dry* when housed, or otherwise artificially dried. The old roping plan is very good, inasmuch as they may be suspended from the sides of rooms or ceilings, where the floor is necessarily occupied with something else. The air, moreover, circulates with great freedom, and from contact being avoided, there is less inducement to sprout in the spring. If they are trimmed and laid on floors, more care should be taken in housing them dry, and in selecting a dry room for them.

CARROTS.—These, so liable to the grub, are apt to require housing before most other roots. We have had crops the admiration of everybody up to the end of August. By that period, however, the grub had given such unequivocal symptoms in the foliage by its beginning to yellow, and even droop, that it was deemed expedient to draw and secure them. After cutting the tops "into the quick," they were thrown abroad for several hours, to kill the fibres; and the points of the roots, where the grub had commenced its ravages, were cut off. After this they were placed in a heap on a dry bank, layers of sand and Carrots alternately. As for Mangold, Swedes, Parsnips, &c., more will be said in our next.

CLEANING AND BURNING.—This is one of the most important steps with regard to future progress that can be named. A general and final clearing should be made at this period, both for decency's sake, for the sake of providing charred materials, and with a view to the crops of the coming year.

We have often advised that all refuse materials, not fit for animal food, be collected for months previous to an autumn burning, or rather charring, to one convenient spot, where weeds, the parings of dirty walks, or roads, or roadsides, are placed ready to cover the whole with when kindled. Did people know, as well as we do, the value of such things, the whole kingdom would soon be put under a cleaner system. When cleanliness and profit lie the same way, it is surely sufficient inducement to carry out a plan. We must here again repeat, and beg to draw particular attention to it as a practical fact thoroughly attested, that had it not been for resorting to this practice systematically, we had long since ceased to produce good Broccolis, Cauliflowers, Savoys, and, indeed, Cabbages. Some two years since we could not produce a crop of these things free from "club." Since then we have systematically charred, and applied all our waste materials, and now the club is almost unknown, and these vegetables fine as ever. This we consider so important a matter, that it ought to be kept constantly before the public, and we shall not cease to do so. Every cottager and allotment-man, with whom we are acquainted, ought to make twice or thrice the bulk of manure and charred materials that he at present does; so that there is plenty of room for improvement. Modes of charring will be found described in previous papers.

RIDGING.—Every allotment-holder should make a point of ridging *every yard of ground* the moment this year's cropping is finished. His last cropping may be said to be about the middle of August; after this he will merely want some Cabbage-ground, Lettuce, &c. The benefits from an early ridging are so considerable, that we must beg to advise landlords to make it a *sine qua non* of allotment holding. The same may be said, indeed, of burning or charring; and although we would avoid, as much as possible, meddling in restrictive rules, yet until the cottager's mind is moulded to a correct appreciation of such important matters, we should think proprietors not only justified, but that it was a duty incumbent on them.

In autumn-ridging, an eye should be kept on the ensuing year; indeed, we would have the allotter fix in his mind the scheme of cropping for the ensuing year as early as the middle of September in the present one. By so doing, he may be enabled to use up some kinds of manures to advantage; and where the land is sufficiently friable, to save a second digging in the ensuing spring—not that we have any objection to a second digging, far from it. The cottager, however, like other portions of society, not unfrequently finds himself overmatched; and, in such cases, it is well to have anticipated a pressure, and made things secure. In addition to autumn-ridging, let us advise a turning or two in winter, for every movement tends to increase the qualities of the soil.

As to the general introduction of manures in the autumn for ensuing crops, we dare not advise it; yet, if the ground *must be* prepared for given crops, by autumn-trenching, with an intention of simply levelling down the ridges in the ensuing spring, we have no objection to the introduction of half-decomposed manurial matters, but would, by no means, introduce any of a rotten character; such being in a high state of solubility, a high percentage of their qualities would be carried away by the rains.

DRAINING.—The end of October is a capital time to commence draining. By this time the autumnal rains will have made the damp portions of the soil quite manifest, and it is scarcely necessary, we hope, again to point to the importance of the process by which great crops are rendered earlier, and doubly productive. An early start is of great consequence; and the benefits arising from draining are insured the very first season.

THE PIGS.—From now until the end of November is the time to get the barn hog forward, at little expense. As soon as the crops are housed from the garden, all becomes real expense, purchased or marketable materials, which is the same thing in this case. All half-decaying leaves of the Greens, Mangold, Cabbage, Parsnips, &c., are very nourishing at this period; and if the hog can get a run occasionally under neighbouring Oak-trees, without trespass, the acorns will bring him on famously.

R. ERRINGTON.

APIARIAN'S CALENDAR—OCTOBER.

By J. H. Payne, Esq., Author of "The Bee-keeper's Guide."

THE time has now arrived for deciding upon which *stocks* are to be set apart for standing through the winter, and which are to be driven and joined to other stocks in the manner given in the calendar for last month. Those set apart either for swarming, or working in glasses next year, should be rich both in bees and honey, weighing, at least, from *two* to twenty-five pounds each; those that are not so heavy must have a few pounds of food given to them immediately, as well as having the bees from weak stocks joined to them.

Stands.—The pedestals on which they stand should now be carefully examined a few inches below the surface of the ground, and, if unsound, replaced with new ones.

Coverings.—The coverings, also, to the hives should be made secure against winds and rain. The milk-pan, I must still continue to say, notwithstanding its unsightly appearance, is, in my opinion, the best protection for a hive, and for the winter months more especially so.

Writers on Bees.—The bee-keeping readers of THE COTTAGE GARDENER have, I doubt not, been both instructed and amused by the papers of the "Henry Taylors" which have, from time to time, appeared in its pages; for myself I can answer in the affirmative, and beg to thank them both; but as doctors occasionally disagree, it will be well to say to our apiarian readers, that Henry Taylor, of Newland, near Hull, is *not* the author of the "Bee-keeper's Manual."

Bees with a North Aspect.—Much has been said of late as to the advantages arising from placing bees with the hive's entrance to the north, which the following letter from a gentleman in Devonshire tends very much to strengthen. He says:—

"In compliance with your wish, I visited B— yesterday, and, although not fortunate enough to find Mr. D. at home, I had a long conversation with his gardener, who alone appears to take any interest in apiarian matters. One wooden hive, brought by Mr. D. from Oxford, is placed behind a wall, through which the bees issue towards the *south*; another wooden hive is completely embedded in shrubs, but the entrance faces the *north*. There is a stock in a portion of a hollow tree, which was found when the tree was cut down, and removed to its present position, also facing the north, and a row of fifteen common straw hives have the *same aspect*. Thus, you will perceive that seventeen, out of a total of eighteen stocks, are kept *permanently* facing the north. The gardener states that he has preferred a north aspect during the last ten years, and that he gets *earlier swarms* and more honey than his neighbours. For two or three years previously, he kept half his bees facing the south, and half facing the north, and by weighing them in the autumn and spring (September and April), invariably found that those facing the south consumed *ten times* the quantity of food as compared with the others. For instance, if one consumed ten pounds, the other consumed but one! and if one lost fifteen pounds during the winter, the other would only diminish a pound and a half!

"I should state that B— appears to me a first-rate locality, being close to an extensive heath, now in full flower. The gardener told me that not only had he no difficulty in maintaining second swarms, or casts, during the winter, but that he considered them quite equal to the first, or prime, swarms. The row of straw-hives is sheltered by trees and shrubs towards the south, but lays quite exposed to the north wind, which the gardener considers most important, as he attributes the diminished consumption in the winter to the cold winds keeping the bees torpid. The above is all the information I was able to glean during a long conversation, as no kind of memorandum of any of the experiments has been kept, and in the hope that it may prove interesting, I am, &c."

Now, it must be remembered, that this has been done in Devonshire, and it is not unlikely that climate may have to be considered as to aspect, and what may do in Devonshire might not answer so well in colder parts. It has frequently been recommended to give bees an aspect more or less southerly in summer, and a northerly one in winter; but there seems now to be the strongest reason to expect that for *all* reasons the latter will be found most suitable.

From the favourable reports I have very recently received from persons who have tried a northern aspect, I am induced to adopt it myself, at least for a portion of my apiary, and several of my friends around me are about to do the same, so that its advantages, or disadvantages, will, I trust, be fairly tested.

TRANSACTIONS OF THE HEN-YARD—OCTOBER.

AFTER this long Cochinchina digression, we may once more take a peep at the hen-yard and its numerous cares. This time of the year is like the harvest home of the poultry-keeper. The roosts are well furnished with fine fat chickens ready for the table, and eggs are still abundant; for the mother hens, which have been long occupied in hatching and bringing-up chickens, having benefited by the superior feeding that they have enjoyed while cooped with their young families, are now in prime laying order.

Especial care *must* be taken at this season that the hen-house and hen-walk does not become over-crowded, and, in consequence, foul. It would be well, before the year is further advanced, to take advantage of a fine, dry, warm day, for a final lime-washing, but the house should be afterwards well dried, with a stove if necessary, or the poultry may take cold, and thus get more harm than good. Kill the young cocks which are ready for eating, especially such as become troublesome among the other fowls, on account of a quarrelsome disposition, or from any other cause. When about four or six months old—I speak now of common fowls—they have all the delicacy of chickens, and are yet large enough to render the consumption of them advantageous with regard to economy. But if there is a danger of the hen-house becoming over-crowded, sacrifice them much earlier rather than allow this to be the case; for if from crowding, or the want of constant cleanliness, it should either become infested with vermin, or attain an unpleasant smell, the fowls will be sure to become unhealthy, and some of the younger chickens probably lose their lives.

While eggs still continue plentiful, the thrifty housekeeper should allow her egg-basket to become well filled; for the period of moulting is approaching, when the well-worked hens, which have done us such good service for all these months, must be expected, and *should be allowed*, to take as long a holiday, in reason, as nature dictates. Various receipts have been given for preserving eggs for winter use; some persons arrange them in jars, and fill in all the interstices with salt, others immerse them in lime-water, whilst a third method is to grease them slightly all over with butter, lard, or mutton fat, thus filling up all the minute pores of the egg-shell. I believe all these different ways are good, but I prefer getting *really* new laid eggs in winter, by following out the treatment of the hens recommended in these papers for the early months of this year; by doing so, I find that I am *very seldom* without eggs, except during the few weeks of the moulting season, and even then two or three hens will frequently continue to lay until those which have become arrayed in their new feathers commence again.

I need scarcely recommend to those who take an interest in their poultry, to those who have watched the gradual development of the little birds from the hour when the strong, though tiny, bill pressed up its entrance to this world of ours, until passing through the slow and somewhat ragged process of fledging, they reached the full maturity, and strut, and bounce, of cocks and hens; I need scarcely advise those who have so watched their favorites, to follow up their kindness to the last, and direct that they may be killed (according to the words of the author's gardener) as *comfortably to themselves as possible*. A necessary act may yet be done with humanity. I do not consider it important to fast the birds intended for killing, for a long time; to deprive them of one, or, at most, two meals, I think quite sufficient.

When the moulting arrives, most well-fed and clean-kept fowls will pass through it with no apparent inconvenience, and very little disfigurement. If some, however, should appear languishing, or lose a great many feathers before the new plumage is ready to take the place of the old, let such have generous and very abundant feeding. A little saffron-tea made into porridge may be good for them, as well as for

any young chickens that are very backward in fledging as the cold weather approaches.

Work in the Hen-yard during the Autumn Season.—Feed all the poultry well, and more abundantly after they begin to moult. Take care that the backward and timid chickens get a good supply.

BEES.—No. 1.

COMPLETELY as the stock of which I gave an account in a former letter had disappointed me, owing to the extraordinarily cold weather of last May, I did not at all regret having experimented upon it, as it set me to work speculating upon, and afforded me some reasonable ground for attempting to explain, the causes of the failure of so many hives in winter and spring. It also taught me this lesson—that bees have not the power (which has been generally attributed to them) to regulate, at pleasure, the temperature of their lives; or, if they have the power, at least that they are not led in general to exercise it, even (for instance) at a time when the strongest bee-instinct, that of self-preservation, or (as it is called) *loyalty*, would be most likely to induce them to raise it according to their need. Here were not only royal cells ceiled over to be kept warm, of whose existence the bees were perfectly aware, but also young royal larvae in every stage of growth, yet the cold* obliged them to forsake the comb in which they were lodged, when a very slight motion on their part would have raised the temperature of the hive to a summer heat, as, in fact, it did, whenever I disturbed them. The excitement occasioned by alarm, or anger alone, seems to prevail in influencing it, save when the hive is summer-full of brood and wax-makers, and the natural temperature of the bees pervading the whole hive is, of itself, great and exciting. Another thing is worthy of remark,—the old queen (I believe) died *before the completion* of her fourth year; and this, doubtless, is the case with many hives which perish in the winter or spring (otherwise than from starvation), and this is of no unfrequent occurrence. I have been surprised to find how many stocks die away every winter; in two seasons I have lost three hives in this way, which were full and heavy, and this in a comparatively small apiary, and my neighbour's experience is like my own. If, then, there be danger of losing so many stocks from this cause, as confessedly exists (especially in amateur apiaries), am I not right in advising† the destruction of every queen bee in an apiary, who has been ascertained to have completed her second or, at the latest, third year of existence? For would not this effectually prevent the frequent winter-failure of stocks, to which I have alluded, resulting from the death of a worn-out queen, at an unfavourable period of the year? In order to insure the greatest success in following this advice, it would be desirable to encourage *early breeding*, to which I am glad to find Mr. Payne has drawn the attention of your readers in a recent number of THE COTTAGE GARDENER. The advantages of this practice are great in many ways, and it may be done to a remarkable extent (as I hope to show from my own experience this year, in a future paper,) where hives are managed in snug bee-houses, or warm parlour-windows. This would encourage early swarming; in fact, so that a swarm might always be expected (weather permitting) to issue before the 20th of May. Nothing is easier than to catch and destroy the queen of this swarm, which latter would immediately return to the parent hive, and re-issue with great regularity in a few days, under the sovereignty of a young queen. It would not much signify even if it issued a little late (say not till the middle of June), because the enlarged size of the swarm would amply make up for the lateness of the season by the rapid increase in wealth of the new and populous hive. I would further mention, as an advantage resulting from this treatment, that the old stock would be less likely to *cast* than under the usual circumstances; besides that, in the interval between the return and re-issue of the prime swarm a large quantity of honey would be added, in a kindly season, to its stores—either in the hive itself, or in caps or glasses over it. If

the old queen were known to be a prolific mother, I would suffer her to live to the beginning of her *fourth* year; or, if she were a bad breeder, I would destroy her at the commencement of her second year. A little discretion in determining *when* to do it, would result in great success, with little corresponding failure. I am indebted for this suggestion to a valuable paper which appeared in your columns (vol. v., page 72), signed with the initials H. T. Should any individual dread the idea of searching for, and catching a queen among a whole swarm, I can only say that my own experience of its facility fully corroborates what your correspondent has there stated. A little courage, at first, is certainly required; and a bee-dress will give this where it is naturally wanting, as in my own case I will freely confess it is. The practice of destroying queens, at all events, in the way I have recommended, is, it will be seen, no new or untried thing.

But there is yet a simpler and more effectual way of getting rid of superannuated queens, and maintaining a perpetual supply of youthful sovereigns, which my new system of cottage bee-management recommends to notice, and which I must be permitted (at the hazard of seeming to be over-much in love with the production of my own pen and brain), to press strongly on the attention of your readers. I do so from the conviction that that system is the most suited of any to our fickle climate and uncertain seasons, and the persuasion that it must ultimately, if only fairly tried, supersede all other methods of out-door bee-keeping. I have given it a two-years' trial on a small scale, and it answers beyond expectation. This very summer I have managed several of my stocks in this way; and, *indifferent, nay bad*, as the season has been, in every case the result has been highly satisfactory. It must be reserved, however, to a future occasion to treat of this at length.—
A COUNTRY CURATE.

BOTANICAL NOMENCLATURE.

I HAVE only just seen, owing to absence from home, your number of July 24. Will you allow me to make a few remarks on what is said, page 252, on the subject of Botanical nomenclature. I do not deny that many names given by botanists to flowers are absurd; but consider for a moment the amazing difficulty in devising appropriate names for such a multiplicity of objects.

The number of flowers known and named exceeds, I believe, 50,000. Allow five species to a genus as an average, and there are 10,000 distinct names required. Entomology, and other natural sciences, as ornithology, &c., have appropriated, and are appropriating, names by thousands, and thus narrowing the field for botanical nomenclature. B. J. desires the advent of a botanical Lavoisier; but he has appeared already in the form of Linnæus. Perhaps that great man's greatest gift to natural history, was his devising generic and specific names. Lavoisier's nomenclature, as a system, is perfect, but requires almost equal perfection in the science, or it often misleads. For instance, the grand element *oxygen* itself is wrongly named. Lavoisier gave it that name, because he believed it was the chief or only generator of acid; but we have acids, as the hydrochloric, in which there is not a single particle of oxygen.

Names in natural sciences should be *neutral*, that is, involving no theory nor system. Thus, *carbon* is an excellent name. It is short, easily remembered, formed from the Latin, and involving no theory. Such should names in botany be:—1. As universal names, *i.e.*, not limited to one language or nation; they should be either compounded from the learned languages, or have an allied form. 2. They should be tolerably short, so as to be easily remembered. 3. They should be free from all distinctive peculiarity of nation, so as to avoid what is called barbarism. Such names as *Vieusseuxia* (French), *Fuchsia* (German), *Wrightia* (English), should, therefore, be always avoided. 4. And, lastly, they should be *neutral*, and involve no theory or circumstance which may be found erroneous. Tested by these signs, *Vanda* seems to me a very good name. It is of a form, though not classical, yet allied to it. No European nation would find a difficulty in pronouncing *Vanda*. It is short and easily remembered. It is neutral; and,

* I should have stated that the external air was excluded every night, and the ventilators opened beneath the hive, communicating with a warm room, and the glass was always well covered up.

† See "English Bee-keeper," page 34, &c.

what is an advantage to travellers, it is the native name. Compare with *Vanda* such names as *Geissomeria*, *Stigmaphyllon*, *Streptanthera*, and see its superiority. A child can learn and remember *Vanda teres*, but a grown-up person might be perplexed with *Sericographis Ghiesbreghtiana*.

Names, however, like other things, present difficulties to the beginner, which disappear with attention and progress. A merchant once said that he had more trouble to get the first £500 than the last £50,000. So in botany, the first 50 or 100 names are the main difficulty. An excellent way of learning the names of flowers is to have them always distinctly labelled; and, if a tyro in the classics, get a learned friend to pronounce the name till you fully associate name and plant together, you will then have no more difficulty with *Stephanotis floribunda*, *Tacsonia pinnatistipula*, *Habrothamnus fasciculatus*, and other such charming beauties, than with *Ranunculus*, *Anemone*, *Fuchsia*, or *Dahlia*, or even *Violet* and *Primrose*. Again, when you see in the gardens and green-houses of friends a new plant, i.e., new to you, write its name correctly down in your pocket-book. As opportunity offers, consult some figured botanical work for its representation. Name and figure will thus be associated in your mind; and whenever you see the plant again it will be recognised with delight as an old friend. This may lead on to a little study of the beautiful science of botany; and when the elements are fairly mastered, and you are launched in this sea, you will see in flowers, and in their very names, a beauty and interest before unknown, and treasure up an inexhaustible source of pleasure and delight. I do not fully justify the name of *Chorozema*, to which B. J. alludes; but still I think there is some advantage even in the circumstance that the association of ideas will fix indelibly on the memory that it is an Australian plant, and being a genus of a tribe closely allied to *Hovea*, *Kennedya*, *Bossia*, &c., will be a clue to the fact that such are denizens of that arid yet interesting continent.—A LOVER OF FLOWERS.

[We think our correspondent has made out a stronger case than we did against botanical names; and we do not admit that any one of the pleas in defence of *Vanda* or *Chorozema* is admissible, except that the first is short. The most remarkable feature of plants should be that on which both their generic and specific names are founded, such as *Amaranthus flavus*. ED. C. G.]

PLANTING.

(Concluded from page 389.)

I HAVE lately had to break up and re-plant an old garden, and some of my proceedings have been as follows:—The first thing to be done was to dig off the top spit of this "lawn," and place it in a longitudinal heap; and the next thing, to uproot every wretched old fruit-tree, the whole of which, judging from their appearance, had seen seventy or eighty years hard service, and were of pollard mien. Then the entire border, eleven feet broad, was excavated two feet deep, leaving the bottom on a gentle slope from the wall. At the end of this border a dry tank was hollowed out (taking the bottom of the border as a level to work from), five feet deep and four feet diameter, the sides built up with stone, to prevent its falling in, and a drain laid the whole longitudinal length of the border, on that side farthest from the wall, of sufficient size and fall to carry the water readily into the tank. Four inches of broken stone was laid upon the subsoil (a plastic clay), a layer of turf over this; the "shocking bad" stone wall, 196 feet long by 10 feet high, pointed and partly built anew; the "lawn" mixed with a sufficiency of the surface soil off the cultivated part of the garden, with mortar rubbish in the proportion I previously wrote of, placed two feet deep, and thus filled up the border. A gravel-walk was laid the whole length, and placed upon the outermost five feet of it, to economise ground, and economise roots (no spade can annually cut off the principal surface roots of the trees snugly ensconced under this); the dwarf trees, of masonic memory, planted postly, their stems four inches away from the wall; a currant bush planted in some of the angles between the trees, and two feet from the edge of the walk; also against the wall, to fill up spaces till the trees covered it. On the other side of the walk a four-

feet longitudinal border was made, and planted with gooseberry bushes; which thus have extra liberty of sending their roots under the walk, and I have no doubt they have taken advantage of it. I must further mention, that I mixed a quantity of broken bones, and a larger portion of brick and lime rubbish for my vines; and the border, taken as a whole, I graduated according to the nature of the trees. For instance, I did not add quite so much lime rubbish and turf for the Morello cherry, less still for the pears (I fear for them I have made it rather too adhesive), and scarcely any for the black currants.

These are the names of my fruit-trees, and the order in which they are placed in the border:—*Vines*—1 White Muscadine, 2 Black Esperiones. *Peach*—1 Grosse Mignonne. *Apricot*—1 Moorpark. 1 *Greengage*. *Cherries*—1 May-Duke, 1 Morello. *Pears*—1 Marie Louise, 1 Duchesse d'Angouleme, 1 Knight's Monarch, 1 Hacon's Incomparable; and 2 *Black Currant trees* against the damp, shaded, farthest end of the wall. *Currant trees* on border—red and white. *Gooseberries*—chiefly the larger sorts, "Roaring Lions," "Thumpers," &c. The points of the compass, from the peach-tree, which this wall bears, is south-south-by-west; that part occupied by the grapes east-east-south. A proper coping is intended for the wall next spring.

Delicate fruits, such as peaches, apricots, &c., teach for themselves a tender and delicate handling. I come immediately to treat upon apples, which, if you wish for fine fruit, you must not allow to set, in the first instance, too thickly: thin them out according to the strength of the trees (this applies to all fruits).

I believe I am reckoned rather a good hand in *keeping apples*, but perhaps this may be owing to the convenience I have always had for so doing. I gather them very carefully, and lay them immediately, and singly, on the floor of a garret, where light and a small portion of air is admitted (the speckled and damaged ones being placed separate for immediate consumption); here they remain till the middle of November, when they are taken into a dark cellar of even temperature—say 55°—and laid singly on boards, covering, also, the pavement. I find those placed on the rather dry pavement keep the longest and plumpest.

Where I resided formerly, and could procure fern *ab libitum*, I used to amass a quantity of this, dry it thoroughly, and stripping the leaves from the stalks, place each apple singly in a handful of it, and pack them away in hampers: a surprising quantity would be put away in a small space, on account of placing one hamper on the top of another, and so on. If one apple happened to rot in this way, the fern kept it apart, so that it could not readily contaminate its neighbour. They kept very well this way. I do not like hay or straw to keep apples in, or upon; they spoil the flavour. Pears, decidedly, are best kept singly on boards, suspended in nets, or attached to lines of twine, singly, by their stalks, and suspended from one side of a room to the other: never wipe an apple or pear till you serve it at table.

The criterion to gather fruit is before they become "dead" ripe, viz., when the stalk will part freely from the tree by raising the fruit gently with the hand. If you do not gather the fruit yourself, and you wish it for keeping, be sure you can depend upon the person who gathers it for you. I once set a worthy to gather a few apples for me, being myself otherwise occupied. I gave him particular instructions how to gather, and afterwards place them softly and singly upon the floor of a loft. I was 100 yards from this loft, when from it issued a rattling as of thunder. I well knew it was my poor apples tossed pell-mell out of their receptacle, and of course bruised every one of them. I said nothing; the thing was done, and the man never after to be trusted. I went up to see my unfortunates soon after, and I knew by the odour I smelt all around that a quiet, comfortable whiff was at the bottom of the mischief. Personally, I hate tobacco; and since that time I cannot say I admire a man about me with a pipe in his hat, or pocket either.—UPWARDS AND ONWARDS.

THE POTATO DISEASE.

I RUSHED into a long argumentative scrape, no farther off than last week, advocating, in a chief measure, those prin-

ciples as regard the potato, which have since appeared in Mr. Errington's article on "Allotment Farming."

I have often asked the question of myself, in what manner can a potato be benefited by remaining in the soil, after its foliage and stem is prematurely dead of disease? Does the fruit on a tree improve, if, through blight or any check in nature, the foliage and branch is deprived of vitality? Are not these two causes in effect analogous?

I will not urge the question, whether a potato should be taken out of the soil or not, if it goes through all its ripening process, carrying a hale and healthy foliage to the allotted time of nature. What my limited "experience and observation" lead me to infer, is, that so soon as the stem of a potato becomes blackened by disease, the sooner the tuber itself is taken up from the soil, carefully looked after, and attended to, so much, by far, the greater produce will remain over and above capable of introduction as animal food.

I write with a good motive: I was a potato-grower before the disease, and have been one ever since. I have witnessed the infection of the haulm annually, but I can confidently assert, that I have had very nearly as good a quality of potato as heretofore, and no despicable sample either.

In the first year of the disease, part of my attention was given to the pigs. I well remember a rather large piece of ground planted with potatoes ("Birmingham Blues"); I prided myself on their appearance, and had almost begun to calculate the money they would return when consumed; and in the shape of bacon. Delusive grasp! in a few days after this their tops were diseased, and reeking in everybody's nose. I had not heard of the disease, and I believe these were the first in the neighbourhood to be attacked; being forwarder with them than my neighbours. The affair was so sudden, and the getting them up so sudden as well, that before the disease in those parts became bruited in the papers, the potatoes were boiled, salted, and rammed down in the hog-tubs, the putrid ones buried in a rippled grave by the side of the river, and the diseased haulm burnt on the ground. I little thought to what an extent the disease was about to spread; I knew, though, and that is the pivot I am turning on whilst I write, that the tubers could not increase in health or bulk by remaining in the soil after the foliage had been destroyed by so sudden a check of nature.

I also thought, that by taking the diseased potatoes to a distance, and burning the haulm, the contagion should not, if I could avoid it, spread to my neighbour's ground, or be inherited in the soil. I was under a delusion, in this, however, but my intentions were good? I certainly had more food produceable for the pigs—and for some time too—than most good people who did then, and do to this day, leave their stricken potatoes in the ground to ripen. (Query to rot?)

In the following season, every one was on the tip-toe of anxiety looking out for the disease; and come it did, though not quite so virulent, or in so early a state of growth. I had a little contrivance preparing in my mind's workshop, which, so soon as the disease appeared, I summoned forth. There were several "trams" on the premises, which formerly had served the purpose to stand cider barrels upon, and some timber slabs lying about; these latter were nailed flat on the face of the former, as well as upright on their ends and sides, forming, as I then termed them, potato trays.

So soon as the haulm became blackened, up came the potatoes. They were instantly deposited in a dark cellar, of even temperature, from four to six inches deep in the trays, without a particle of mould or anything sprinkled amongst them; were looked over regularly; very few of them became uneatable (those which did show sign of disease were instantly boiled for the pigs); they were easily come-at-able to "spurt;" under observation any moment; kept well; and I was only sorry, as the thing turned out, that I had not planted ten times the number.

When I came here, I was, like almost everything besides, minus my potato trays;—by the merest chance I stumbled on some old doors, some slabs and boards were nailed to the ends and sides—I was once more possessed of trays. My odd man here, when I set him to take up the potatoes, was rather dubious, and made sundry murmurings about the skin not being set; his wife was more decided. I had

an excellent crop,—188 sacks per acre. (In garden ground, my practice is to fork it over regularly after taking-up time, to prevent the bother of self-sown potatoes springing up among growing crops the following season.) After Providence had been so bountiful to me, I gave the man these gleanings, which, when his wife received, she sent me the consolatory assurance that they (my potatoes) would be all rotten in two months! whereupon I returned her my no less comfortable assurance that, at the next taking-up time of potatoes, I would make her a present of a basketful of the then present season's produce, and I did so. As my employer does not keep pigs here, I merely provide from six to seven sacks of potatoes, which is sufficient for a family of four individuals and contingencies, with a supply of other vegetables in their season.

If any of my readers should be tempted, from what I have said, to adopt this system on a small scale, by way of trial, I feel almost persuaded they will continue it.

Part of my potatoes are up, and in their trays at this moment. (Savoys and Brocoli are growing on their site as if nothing had happened.) A thermometer in the dark cellar where they are located, marks 57 degrees; extraneous air is excluded.

Some people may say "7 sacks—tut! I have 107 sacks to provide." Be it so; yet, if I can throw out a useful hint to my fellow-man, my object is gained. I write for people with small convenience. The tiny fine-drawn spring, which works a watch so diminutive that a fourpenny-piece will cover it, multiplied, and applied, would enable the largest clock ever invented to keep time.—UPWARDS AND ONWARDS.

THE DOMESTIC PIGEON.

HOW TO STOCK THE DOVE-HOUSE.

(Continued from page 345.)

HITHERTO the dove-houses, at least in France, have only been stocked with the three varieties of the Stock-dove, and three-parts of them are so inhabited; no doubt the preference given to this race is from their having the instinct of straying some distance in search of food, in the fields, and thus being self-supporting during part of the year. But these advantages are not proportionable to the produce. The Stock-dove does not usually live more than eight years, and is not prolific for more than four, after which time the broods gradually decrease, and at the expiration of six years cease altogether. The greatest production is from two to three broods a-year, through the north of France, and from three to four in the south. The broods commence in May, and continue till August, inclusive; we also find some young ones in September. It has been proved that fancy pigeons might soon be accustomed to seek their food in the fields, as well as the stock-dove, we might, therefore, stock the dovecote with them with the same economy; there would be this difference, that the produce would be trebled, for even supposing their laying to be diminished by the necessity of taking long flights in search of grain presented to them by nature, they would not have less than six broods a-year, besides which, their young ones are generally larger and more delicate. Besides, an amateur who would follow our advice on this matter, would choose from among the purest races, those which not only produce well, but which would also have some analogy with the stock-dove; and in this respect, the *Carriers*, *Tumblers*, and *Turbits* would have the preference. The *Mixtures*, even, would easily adopt this manner of living, because they generally fly very light.

The best time to stock a dovecote is the spring. This is done two ways. The first by procuring young pigeons as soon as they can feed themselves, putting them into the dove-house, and feeding them there for some time confined. When we see that they begin to grow amorous, we may give them their liberty; but should take the precaution of choosing a rainy and bad day for so doing, which will prevent their wandering far. The surest way, however, is not to open the door until the laying has begun. We must then accustom them not to depend on the grain we are in the habit of giving them; and to do this we must commence by giving them their daily distribution, half in the dovecote, and half out; giving it them by degrees all outside, and

afterwards daily diminishing the quantity, and finally not giving them any, as soon as most of the second brood are hatched. The second manner of stocking a dove-house is to put pigeons in at fifteen days old, which are not strong enough to fly and leave it; we must nourish them by opening their beaks until they can feed themselves, and never keep them prisoners. As they gain strength they will come to the door, but dare not at first go beyond it. By degrees they get bold, fly round the dove-house without straying far from it, recognise the outside of the habitation, return there, attach themselves to it, and do not leave it again. When young, we must feed them until they begin to lay the second time.

Whatever means we make use of to stock a dove-house, we must always choose birds hatched in spring. Those hatched in May are the best, because they have acquired all their strength before winter arrives, and this season will have no influence on their constitution.

The colour of the young pigeons ought, also, to be taken into consideration in choosing them for stock. We have frequently remarked, that when a bird of prey chases a flight of pigeons, if it can find one white one among them, it generally becomes its victim. In short, it appears that this colour is a certain aim for the hawk. In order to prevent this inconvenience, we give the preference to dark-coloured birds. Many economists carry this precaution so far as to visit the nests regularly, and take away all the white ones, which they send into the kitchen. They are considered more delicate than the others. White pigeons, however, have had the reputation of being the most fruitful of all; though some amateurs who write on these birds have rejected this opinion without examination. We know that the more ancient a race of pigeons is in its state of domesticity, and the more trouble that has been taken with it by man, the more fruitful it is. This long slavery shows itself by the variety of colour in the plumage; and the most striking change of colour is certainly that of the dark-grey, brown, and black, into white. But if in the stock-dove the white shows a more ancient origin, a variety more estranged from its first character, we should not be surprised to find that the birds adorned with it may be more fruitful.

If we wish to see a dove-house prosper, we must not take any young ones from it until the third year, because by this means we shall increase the number, and the young ones born in the habitation, and becoming attached to it, will thrive much better than those which have been removed to it, in spite of all the precautions we may have been able to take.

DESCRIPTIONS OF PIGEONS.

ELEVENTH RACE.

RUNT PIGEON (*Columba domestica*).—These beautiful birds are naturally found placed between the Warted and the Looking-Glass pigeons. They very closely resemble the first by the thickness of the membranes which cover their nostrils, and the red ribbon of the eyelids; but they are not so high on the legs, and generally have a shorter neck. They may easily be distinguished from all other pigeons by the small red circle surrounding the eyes, and the red colour of their eyelids, by their whitish iris, and, finally, by the two beans that form their mushroom (or wattle). This race is very common in Italy.

COMMON RUNT (*Columba domestica vulgaris*. See *Cut*).—The largest of the dovecote pigeons after the Persian and the Large Warted. It has no tubercles above the beak, but a red border round the eyes; pearly eye, or, but rarely, a yellow iris. No tuft, low on the legs, naked feet, wings rather drooping, plumage of different, but almost always uniform colours, usually a blackish brown rather inclined to purple, with a kind of red and green reflection on the neck; it is also blue, dun colour, fawn, red, black, and a blue sparkling black. It flies badly, does not stray far from home, and is moderately productive.

MIXED RUNT (*Columba domestica mista*).—More elegant and active than the preceding. It has been produced by crossing the Common Runt with the Batavian Warted Pigeon. A small mushroom on the beak, eye pearly, or, but rarely, a yellow iris. It differs especially from the Common Runt in its legs, which are longer, as well as in its figure, and in its thin and long neck; otherwise it has the same plumage,

dun colour, black, &c. It produces well, and flies better than the other, although it has less space between the two extremities of the wings.



BASTARD-CARRIER RUNT (*Columba domestica pseudo tabellaria*).—This very much resembles the Persian Pigeon, as well in its brown plumage, as in its eyes encircled with a naked skin, and its nostrils covered with a thick membrane. Some authors have thought that these pigeons are employed by the inhabitants of Cairo, Aleppo, and Alexandria, to carry despatches, but this statement appears very doubtful, for this heavy species flies very badly; and as all pigeons have the skill of returning to their dovecote when taken from it, it does not appear to us at all probable that they should have chosen the one decidedly the least capable of attaining the desired object. Another and still more convincing reason is, that whatever may have been said by the travellers Pietro della valle and Thévenot, no one is more astonished than the inhabitants of Cairo, Alexandria, and Aleppo, when we talk to them about Carrier Pigeons, of which they have not the slightest idea. Further, the Bastard-carrier Pigeon no longer exists in France, at least we have never seen it there. Willoughby says it is very long, and high on its feet.

ANDALUSIAN OR SPANISH RUNT (*Columba domestica baetica nigra*).—Always black, or dun colour; head mixed with grey feathers; in other respects, it very much resembles a Common Runt Pigeon; a filament round the eyes; no tubercle on the nostrils; the eye pearly.

CLOAKED RUNT (*Columba domestica palliata*).—The same form; red all over the body except the cloak, which is white; a filament round the eyes, and pearly eye.

GREY SPOTTED RUNT (*Columba domestica cinerea punctata*).—One of the largest of the race. Beak with membranous nostrils; a ribbon round the eyes, and iris inclined to yellow; the end of the plumage grey, speckled with black all over the body; the spots closer together on the throat; feet slightly shod. This pigeon is very productive.

LEAST FEATHERED-LEGGED RUNT (*Columba domestica baetica calculosa*).—It resembles the Common Runt, but its colour is dun or tawny, with the ends of the feathers of the cloak and throat of a pale colour, approaching to a clear flame colour. It is not rough footed; has a border round the eyes, and white iris. Its nostrils are simply membranous. This bird is very fruitful.

CREAM-COLOURED RUNT (*Columba domestica candida cafea*).—The smallest of the race. It has rather a thick membrane on the nostrils, a filament round the eyes, and a yellow iris. Its feet are naked, its plumage is cream colour, with two stripes of a deeper colour on the flight. This pigeon, which is very pretty, has also the essential quality of being very productive.

SILVER RUNT (*Columba domestica argentata*).—The bottom of the head white, mixed with a light slate colour; neck

and throat of a bluish black, reflecting a metallic green; covering of the wings and cloak of a bluish grey, shaded with white. The basis of each feather a deeper colour, and a slight white edge. The flight of a blackish grey, striped with light grey; back inclined to white; the rump and tail slate-colour, this last terminating in a black bar; eye pearly. This superb bird generally produces well.

TWELFTH RACE.

LOOKING-GLASS PIGEON (*Columba specularis*).—It is inconceivable, that, although so many authors have written on pigeons, none have noticed this race, which is very remarkable for the beautiful colours of its plumage. This cannot be because they have never been acquainted with it; for, although it is not very common, all the amateurs know it, and several of them possess some varieties of it. It cannot be because they do not consider it a pure race; for these pigeons are positively what they call a pure race, since they cannot be crossed with any other variety, however close it may appear, without being for ever lost. Be this as it may, these birds have the general characters of the Mixture pigeons, and can scarcely be recognised from them, but by the striking beauty of their plumage. They never have any filament round the eyes, and their iris is generally yellow.

RED LOOKING-GLASS PIGEON (*Columba specularis rubra*).



—It is of a blood-red colour, crossed, about eight inches from the end of the quill feathers of the wings and tail, by a greyish-white stripe, about half-an-inch wide. The red on the end of these feathers is rather more clear than the rest of the body. It has a cock's eye, that is to say, a yellow iris. This charming variety, of middle size, is very productive, and deserves, under all circumstances, the attention of the amateurs.

YELLOW LOOKING-GLASS PIGEON (*Columba specularis lutea*).—This pretty bird only differs from the preceding in the points of its plumage, which is yellow; it is also speckled in the same manner on the large quill feathers of the wings and tail. It has the same fecundity.

SMALLEST LOOKING-GLASS PIGEON (*Columba specularis minima*).—Resembles the preceding, but is much smaller, being very near the size of the stock-dove. This charming bird is very productive.

DRIVING BEES.

WITH the experience of one season, and the works of Huber, Payne, Huish, and Taylor, I herewith send you my plan of driving bees, which has succeeded in every instance. I use Payne's Improved Cottage Hive, fitted to a two-inch wood-hoop at the bottom, to clear the hive from the floor-

board, a four-inch entrance, quarter-of-an-inch in height, perforated zinc slide to the same to close the hive, or admit one, two, or twenty bees at pleasure; strong separate stands and loose floor-boards, the former arranged to prevent mice from entering the hive; the latter, eighteen inches square, one-and-a-half-inch thick, the edges chamfered from the circle the bottom of the hive occupies, with a sound milk-pan for a cover, all well-painted—cracks and holes well-stopped, the upper three bands and roof of the hive not painted.

I procured my stocks, last spring, in the old Cottage Hive, and allowed them to swarm. I have now driven the stocks from the old hives and joined them with second swarms, thus:—At night I stopped the entrance of No. 1 hive; on the following day, at 10, A. M., I removed it, with floor-board, to a quiet spot in my garden, and turned it up, the floor-board still remaining on: I then placed an empty hive, No. 2, on what I term a connecting board, which is a floor-board with a twelve-inch circular hole in the centre. Place the edge of such board against the edge of the floor-board, and gently push the latter off the hive, rap the sides of the hive about ten minutes, and her majesty and subjects will ascend the empty hive, No. 2; which remove to the stand on which No. 1 formerly stood; clear the old hive of honey, &c., and the few remaining bees will return to their companions in their temporary habitation. At night, stop the entrance to No. 3 hive (the one selected to join the bees now in No. 2), remove it with stand to a distance, to allow No. 2 and floor-board to take its place; remove the straw covering, and place No. 3 on the top of No. 2; in the morning open the entrance to No. 3; the bees will be joined and work well together:—one of the queens will be deposited.

In the evening, place No. 3 on its original stand in the usual place, and all will go on well. I have adopted this plan, and scarcely a bee have I destroyed; you do not require even the protection of gloves. I have now done away with the old hive and substituted Taylor's Double Ear Hive, Payne's Improved Cottage Hive, and an Invented Hive. It is J. H. Payne, Esq., Bury St. Edmunds, whom I have to thank for so plainly elucidating the humane management in your valuable work, which fixed my mind to the management of the industrious bee, and many hours' gratification have I experienced, which I hope to turn to good account with the numerous cottage labourers in this district, who commit the bees to the fumes of sulphur, after their toil for their winter store.

ROSEA.

ENGLISH CAGE BIRDS.

(Continued from page 342, vol. v.)

THE WILLOW WARBLER.

INSESSORES DENTIROSTRES. SYLVIADÆ INSECTIVORA.

Sylvia Trochilus; *Motacilla Trochilus*; *Regulus Trochilus*; *Curruca Trochilus*. Yellow Warbler; Yellow Wren; Willow Wren; Nettle Creeper; Bank Linnet.

THIS is a very active and elegant little bird, arriving here rather earlier than the Wood Warbler, and about the same time as the Black Cap; it is much more numerous than the Wood Warbler or Chiff Chaff, and is distinguished from the former by a darker olive-tinted plumage, the streak over the eye less defined, and by the under portion of the body being tinged with yellow; and from the latter by its pale brown legs, those of the Chiff Chaff being dark brown or nearly black. The Willow Warbler is found frequenting woods, plantations, shrubberies, gardens, &c., flying from tree to tree in search of its insect food, upon which it entirely subsists, as it does not feed either on fruit or berries, but flies of every description, aphides, small caterpillars, and maggots, in fact almost every small insect that comes in its path. Its song is rather pretty and plaintive, and is delivered either from the topmost branch of a tree, or as it is hopping from branch to branch, and also on the wing. Its nest, like the former, is of a rounded or oval form, built on the ground, generally in the coarse grass on the bank, and is composed externally of moss and grass, having a small hole on one side, the nest being domed over, and is lined with feathers. They are readily kept in captivity, either from the wild state or reared from the nest; if from the wild state, they should be fed on living insects for some

days, sticking some of them into a paste of bread and milk and hempseed, until they at length become accustomed to the paste alone; they should then be fed either on that, or, in addition, with meat and egg chopped small, and occasionally a branch with aphides upon it, which they will very soon clear, or a few maggots. The young ones are reared in the same manner as the Wood Wren. The Willow Wren is fond of milk, and will drink it out of a teaspoon if held out to it, after being kept for a short time. It soon becomes excessively tame, picking the flies or other insects offered to it from the fingers of its keeper; and is a very interesting pretty little bird, nestling at night close up to its congeners for the sake of warmth, or if you have many, occupying the perch in a row like a soldier's rank.

THE CHIEF CHAFF.

INSESSORES DENTIROSTRES. SYLVIADÆ INSECTIVORA.

Sylvia Hippolais; *Motacilla Hippolais*; *Trochilus minor*; *Regulus Hippolais*; *Sylvia Rufa*; *Curruca Hippolais*; *Sylvia loquax*. Lesser Pettychaps; Least Willow Wren; Hedge Warbler.

THIS is almost the first of our summer visitants, arriving here very early in the spring; is of a lively and active disposition, uttering its peculiar song as it hops from tree to tree, which may be readily distinguished from every other bird by its singularity, resembling, as near as words can express, "Chipp-chopp, cherry-cherry; chip-chop, cherry." On their arrival, their food consists of larvæ of different species of insects found rolled up in the leaves and buds of trees, and, while flying from tree to tree, catching any winged insects, such as gnats, that may come in their way. They are purely insectivorous. This bird, like the two former, is easily kept in confinement, resorting to the same means, which I need not here repeat. The three species above-named are rather more delicate than the Nightingales, Blackcaps, or White-throats, and are seldom kept in confinement from their delicacy and having a less robust song; nevertheless, in shape and colour they are exceedingly beautiful, often very tame, and altogether very interesting. I have kept them some time, having all the class Sylviadæ together, so that each can take its own choice of the variety of food placed in a large aviary. If kept in small cages, these must be kept remarkably clean.

THE FIELDFARE.

INSESSORES DENTIROSTRES. MERULIDÆ.

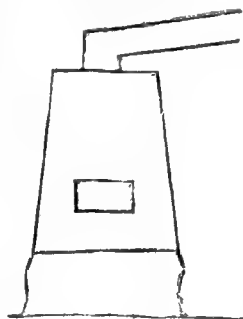
Turdus Piloris; *Merula Pilaris*; The Felt; Pigeon Felt.

THIS bird is large and handsome, and is very readily kept in confinement. As it does not breed in this country, being migratory, arriving here in the month of October, and leaving in the month of March, old birds only can be procured, which, if placed in a large cage secured from observation, will very soon feed themselves if supplied with a number of the berries of hips and haws; these, if stuck in the paste of oatmeal, referred to in the description of the Missel Thrush, will soon attract the attention of the birds after being kept a few hours in quiet, impelled at last by hunger to supply themselves with the means afforded. The berries being his natural food, with worms, if stuck into his paste, he will pluck out, and as portions of the paste will often adhere to the berry, he will, after tasting it, at length be content with that alone; but, in my treatment, I always gave my birds as great a variety of food as possible, throwing into my large aviary berries, seeds of various kinds, and pieces of meat, and cooked vegetables, such as potatoes, peas, and greens. This variety of food kept them always in health. The call-note of this bird is harsh and disagreeable, and whatever may be said of his song in his own country, in this it is one continual grating noise, a sort of garrulous prating of his harsh call-note, without the slightest pretension to song. They become soon reconciled to confinement, but evinced no disposition to breed in my aviary, and I kept them some years. They are very fond of bathing, which should be encouraged with all birds.

W. RAYNER.

DOMESTIC MECHANISM.

THE "ECONOMIC" BED-ROOM STOVE.—We have long looked upon a cheap stove, in which the refuse of coal could be burned, as a desideratum. As an attempt to attain this we constructed a stove of the form shown in the sketch.



It was, in the first instance, made of strong block-tin, and cost, all complete, 1s. 3d. This was soon burnt out, although it lasted an amazing time considering the thinness of the material. As, however, the most common refuse of coal was burnt in it, it would have been a "good investment" to have got a fresh one every month. Made of good sheet-iron, they lasted a long time; one, well treated, would easily last a winter, and would cost somewhere about 2s.; in many districts, 1s. 6d., of the size as follows:—Diameter of stove at bottom, 8 inches; at top, tapering to 5 inches; total height, 8 inches. Size of smoke-tube, $2\frac{1}{2}$ inches diameter; of length, sufficient to reach the chimney when the stove rests on the hearth. The smoke-tube of the stove we had was supported in a wire ring, suspended a few inches from the under-side of the chimney-bearer; when requiring to be cleaned, we passed a small flexible wire down the tube, which, having a tuft of flax at its end, soon cleared all the soot out. A small damper-valve should be made at or near where the smoke-tube joins the top of the stove; this is necessary to regulate the draught, as it is surprising how brightly and rapidly the fuel consumes in this form of stove. The top of the stove we had made in the form of a lid, similar to that of a pitcher or stewpan, but made to fit rather tightly in when cold; the heat expanding the metal, the lid, with the smoke-tube attached, could be easily removed when the chimney required cleaning. The fuel was supplied by the small door made at the side. The stove rested on a plate of iron; or a tray could be cheaply made on which to place it, and collect the ashes. We shall, in a future article, show how easily this simple form of stove can be adapted for cooking purposes.

B.

TO CORRESPONDENTS.

. We request that no one will write to the departmental writers of THE COTTAGE GARDENER. It gives them unjustifiable trouble and expense. All communications should be addressed "To the Editor of The Cottage Gardener, 2, Amen Corner, Paternoster Row, London."

A COAL FUND.—A valued correspondent writes to us thus:—"In addition to the many excellent plans suggested in THE COTTAGE GARDENER for improving the condition of the working-classes, there is one which I should like to mention, not for its novelty, but for its simplicity and usefulness, if rightly managed. It may be rendered serviceable in either town or country. It is a coal fund. We all know that coals are generally dearer in winter than in summer; and the poor have mostly to pay the higher price. They are 6d. per bushel with us now, and in January will probably be 8d. or 9d. I have just contracted for our parish coals below the 6d. per bushel, in consequence of the quantity taken, and in December next shall call upon a few of my wealthier neighbours for their annual subscription (about £10); this sum will enable me not only to reduce the price to 4d. per bushel, but, being added to the amount received from their sale, allows £30 to be laid out in coals, or 1200 bushels being purchased. Thus the poor families in our parish, which are about one hundred in number, have twelve bushels each, or at the rate of one bushel per week, during the three winter months. Further in this direction the hand of assistance need not extend. Now as to the mode of delivery. On Saturday morning, the week before Christmas, at nine o'clock, every cottager who is a resident occupier brings or sends one shilling, and receives for it a ticket or order on the merchant for three bushels of coals, to be delivered on application; and the names of the recipients being alphabetically arranged in a small book, and successively ticked off, in half-an-hour the work is finished. The same plan is followed every third week; and the person for the use of the room where the tickets are given out receives, each time, 6d. Thus for 2s. current expenses, and with very little trouble, one individual may so manage a coal fund, that the poor of any district can be supplied in winter with coals at about half their usual price."—S. P., Rushmere.

ALSTREMERIA AUREA SOWING (T. D.).—If you have it true it does not require a greenhouse or pit to get up the seeds. Sow them in Octo-

ber, an inch deep, in the open ground, and keep the mice from them, and they will come up next April, and flower the year following; but why bother yourself with seedlings of it, as the old plants will increase as fast as a Michaelmas daisy? Take them up every October, and divide them into little morsels, and you may soon cover your whole garden with it; that is, on the supposition that the soil is heavy and moist. It is the only one of the family which prefers such soil. What a pity that every one having boggy or wet clay soil does not grow this very handsome hardy plant, being the only hardy representative of this beautiful family, which numbers a great many species, and a greater number of varieties; but the great mass of the former still remain in the wilds of South America.

PLUMBAGO LARPENTÆ (Leila).—Your plant of this could not be better managed, and you will soon see it in full bloom. All the *Nierembergias* are suitable for rock-work in summer, but recollect they will not stand frost. *N. gracilis* is a beautiful bedder, and *Intermedia* is still better, but no one can grow it well enough.

FUCHSIA CORYMBIFLORA (Rev. J. S. L.).—We should dread leaving it out all winter, with the best of covering, if we had a greenhouse like yours, where we could keep it so much easier all the winter in a half dry state. Why, the annual root-pruning at getting-up time will improve this Fuchsia very much indeed; "a cold greenhouse" is just the place for it. Your plant is *Chironia jasminoides*.

GERANIUM CUTTINGS (J. M.).—Those cuttings that are now rooted, six in a pot, had better be shaken out and put into separate pots, three or four-inch ones, and a "shelf near the glass" in a greenhouse, is far better than the best cold pit to winter them in. As to the size of pots to flower them in, that must be determined by your own skill in growing them. Why not try a couple of them so as to fill a peck pot; by repotting every two months or so, or as fast as one set of pots are filled with roots, change them for a size larger. "What establishment would you recommend to buy" so and so at, is a question that should never be asked of a public journalist. Suppose that you were a nurseryman, or a saddler, or of any other calling, and that your neighbour over the way was in the same line of business; suppose, also, that the articles which both of you offered for sale were equally good, do you think it would require any supposing to know how you would feel aggrieved if we were to recommend your next door neighbour's goods in preference to yours; not that one customer would signify much, but hundreds would go to any shop which we might recommend—nay, every one of your old customers would call over the way.

RHODODENDRON (W. J. W.).—You will have to remove your sickly rhododendron to some place in the shade, and by no means expose it in winter, as you propose; rest, shade, and good peat, will soon bring it round. Rose growers do not sell *rose cuttings*, and it is a thousand pities they do not, instead of burning them by the cartload; but the days are fast coming when cuttings and grafts will be as freely offered for sale as plants are at present, and to the good of all parties concerned. "Good times are coming," and all of us must wait to see them.

DISEASED GRAPES (Langley).—The dark brown or black spots on the green berries of your St Peter's Grape, constitute the disease known to gardeners as "The Spot." It is a gangrene, and is probably occasioned by an irregularity in the supply of moisture, and vicissitudes of temperature, but especially if one of the extremes is much below the degree of heat most favourable to the healthy growth of that plant. The reason of this is very obvious. If any plant be placed in a highly stimulating heat, and is abundantly supplied with root moisture, it immediately increases its surface of leaf and fruit. If this amount of sap is subsequently suddenly reduced, by lowering the temperature, and adding water to the soil less freely, the increased surfaces are no longer required; and it is a law pervading all the vegetable creation, that the moment any of the parts of a plant are unnecessary to it, that moment they begin to decay. Muscats are particularly liable to the spot. Our opinion, that sudden vicissitudes of temperature are the causes of this disease, seems to be well sustained by the fact, that the parts nearest the glass—that is, the upper portions of the bunches, and those parts most exposed to the sun's influence—are the first to suffer; and this, also, goes far towards proving that the shade of the leaves is necessary for the well-doing of grapes.

FLOWER POTS (T. P. L.).—More than one controversy has divided the garden community on the point whether porous or glazed flower-pots are most desirable, and there is no doubt that plants can be grown well in either. We should not hesitate for a moment to paint a flower-pot outside of any colour we desired.

LAYING DOWN A LAWN (W. Q.).—If you employ turf this may be done at any time from September until April. All that is necessary is to have the ground dug level, the surface stones removed, then rolled, and all hollows filled up, so as to render it perfectly level; loosen the surface with a rake, and then lay the turf. The turf from your orchard will do if it be free from weeds, and the grass fine. As your soil is heavy and wet, you cannot expect to have a fine turf unless you drain thoroughly.

PANSIES (An Amateur, Chester).—We cannot recommend dealers. See what we say to-day in answer to a similar application. Write to any of the florists who advertise in our columns.

HARVEST MOON (J., Hampstead).—The calculations you require are not suited to our columns. The harvest moon in our latitudes is a phenomenon occurring at the full moon nearest to the autumn equinox. The

phenomenon is that, for a few days, the moon, instead of rising fifty-two minutes later every day, rises for several days nearly at the same time. We cannot enter into an explanation of the reasons for this, but those who understand astronomy will know what we mean when we say, that the increase of declination compensates the fifty-two minutes delay which otherwise arises from the moon's motion in her orbit.

POTATOES (Rev. A. G.).—Your land is sandy, and has not been manured for seven years. If it has been in grass, or uncropped, during that time, do not manure at all; but if it has been cropped, manure it with thoroughly decayed stable manure, or any decayed vegetable matter you can command; and, in any case, plant Forty-folds at the end of October, or early in November. Do not plant Red-nosed Kidneys, nor any other late variety at all. Plant your Walnut-leaved Kidneys in February, and, in the meantime, keep the seed in a cool dry place, buried in coal-ashes.

DORKING CHICKENS.—We have a communication for Z.

NAME OF PLANT (T. M. W.).—It is the Snowberry, *Symphoria racemosa*.

INSECTS (E. P., Exeter).—The answer to your query was sent, by mistake, to one of our contemporaries. The small weevils, which have devoured the grains of wheat from the Cape of Good Hope, are the *Calandra oryzae*. The little moths, reared from the small green caterpillars which fed upon your Muscat grapes, were much injured in travelling to us; they are a species of Tortrix, and most probably *Cochylis omphaciella*. (W. H. W.).—The irregular, comb-like material, from the stump of an old tree, is part of the nest of the Tree Ant, *Formica pubescens*.

BARLEY BREAD.—A correspondent (M. R.) says:—"In answer to the question contained in THE COTTAGE GARDENER, how barley bread is made, I am living in a country where it is the constant food of the poor people, and it is here made in precisely the same way that bread from wheat flour is made, the barley-meal being previously sifted fine."

THREE-FOURTHS OF AN ACRE (C. W.).—It would not pay you to keep a horse and cart for the purpose of conveying your surplus produce to market. Your horse and pigs will produce abundance of manure for your plot. If you have more garden vegetables than you require, grow Lucerne on a portion of it; this will help to keep your horse; and if, in addition, you had two milch goats, you could supply your family with milk and butter.

SCARLET GERANIUMS SEEDING (A. W.).—Nothing will prevent this; they can only be checked in shedding their petals by shading the flowers, and keeping them supplied abundantly with water.

COTTAGE GARDENERS' DICTIONARY (G. House).—You can have this in numbers. It will be completed in November.

CALENDAR FOR OCTOBER.

FLOWER GARDEN.

ALSTREMERIAS, Van Hout's, varieties, and others, plant six inches deep, and in frosty weather cover with leaves. **ANEMONES**, plant for earliest bloom. **AURICULAS** and **POLYANTHUSES**, put under shelter. **BEDDING GERANIUMS**, save as many as you can store; cut them close, and plant them in cold pits; or dry, and keep in the upper rooms of the house. **BULBOUS ROOTS**, finish planting in dry weather; pot for latest forcing, and for plunging in flower-beds, &c. **CARNATION** layers, finish planting and potting; secure the pot ones from rains. **CLIMBERS** of all sorts, plant, prune, and train. **COMPOST**, prepare, and turn in dry weather. **DAHLIAS**, cut down after frost, and let the roots remain as long as it is safe; when taken up, dry them in open sheds, &c., before storing where frost and damp cannot reach them. **DRESS** the beds and borders, and put mark-sticks to bulbs and other roots, to guide you when digging. **EDGINGS**, plant. **EVERGREENS**, finish planting, b. **FIBROUS-ROOTED PLANTS**, finish dividing and planting, b. **FORK** over borders, &c. **GRASS**, cut very close the last time; keep clear of leaves; and roll. **GRAVEL**, weed and roll. **HEDGES**, plant, clip, and clear at bottom. **HOE** and rake shrubberies, and bury the leaves, &c., between the plants. **IRIDS**, as *Iris*, *Gladioli*, &c., plant, and shelter from frost. **LAYERING**, perform generally. **LEAVES**, gather for compost, &c. **MARVEL OF PERU**, take up and store like dahlias. **MULCH** round trees and shrubs lately planted. **PLANT** perennials and biennials. **PLANTING**, perform generally. **POTTED PLANTS**, for forcing, plunge in the earth of a well-sheltered border, facing the sun. **PRUNE** shrubs and trees generally. **RANUNCULUSES**, plant for earliest bloom; seedlings of them, in boxes, &c., remove to a warm situation. **ROSE-BUDS**, untie the matting, if not already done, from newly budded. **SHRUBS** of all kinds, plant, stake, and mulch. **SUCKERS**, from roses and other shrubs, separate and plant. **TIGRIDIAS**, save from frost as long as possible; should not be dried till January or February. **TULIPS**, finish planting, b. D. BEATON.

GREENHOUSE.

AIR, admit freely during the day, but sparingly at night, unless the thermometer out of doors be about 40°. **ALSTREMERIAS**, shift, or rather pot in rich light soil, and place where they will be secure from frost. **AZALEAS**, remove into the house, especially those that bloomed early, as the least frost will discolour their leaves. **BULBS**, pot for early blooming. **CINERARIAS**, forward ones give manure water, and have secured. **CAMELIAS** (See AZALEAS). **CALCEOLARIAS**, strike cuttings; pot for-

ward plants; prick off seedlings. *CHRYSANTHEMUMS* for winter blooming, provide with shelter from cold rains and early frosts, and water with manure-water, alternately with clean. *CLIMBERS* on rafters now prune in, to give light to the plants beneath. *CLERODENDRONS*, *GESNERÆ*, *LANTANAS*, *ACHIMENES*, &c., keep in the warmest end of the house preparatory to resting them for the winter, or returning to the plant stove. *AZALEAS*, *CAMELLIAS*, *FUCHSIAS*, &c., at the coolest. *CYTISUS* and *GENISTA*, scourge well with soap-suds, and then with clean water, to remove all traces of Red spider, and then place where they can be sheltered, before being housed at the end of the month. *GERANIUMS*, keep clear from fly; and slowly growing; forward ones may be repotted, and fresh struck ones potted off. *GLADIOLUS*, pot. *HEATHS* and *EPACRIS*, get under shelter, and give them abundance of air, when temperature above 40°. *EARLY FUCHSIAS* may be put into sheds before their stems have been injured by frost. *SALVIA SPLENDENS*, encourage with manure waterings, and syringing with soot water, to banish the Red spider before housing it in the conservatory. Plants to be raised from the flower-beds should previously have their roots cut round, and then after potting should have a little bottom-heat, to encourage fresh roots, while the top temperature is kept cool. They will not require to be often watered for a time, but syringing the tops in sunny days will be serviceable. ALL PLANTS should be thoroughly CLEANED, and houses and glass washed and put in good order. WATER should also now be given with a careful hand, and only when necessary. A plant may not require it above once or twice a week now, that would have wanted refreshing twice, in the dog-days, during a forenoon's sunshine. Those swelling their flower-buds, will require, however, a good supply. Bear in mind that bad watering is the great cause why pot plants so often languish and die.

R. FISH.

ORCHARD.

APPLES, house in succession. *BERBERRIES*, gather, m. *BORDERS*, prepare, b; composts, collect. *CURRENTS*, prune, e. *DAMSONS*, gather. *FRUIT-TREES*, remove, e. *FRUIT-ROOM*, carefully ventilate. *FIGS*, pluck off late fruit, e. *GOOSEBERRIES*, prune, e. *GRAPES*, bag, or otherwise protect. *MULBERRIES*, gather. *MEDLARS*, gather. *PEARS*, gather in succession, all at the end. *PLANTING*, prepare for, and proceed with at e. *PRUNING*, commence as soon as the leaves are cast. *RASPBERRIES*, protect late-bearing. *RETARDING*: look well to currants and other retarded fruits; keep away mouldiness. *ROOT-PRUNE*, b. *STRAWBERRIES*, dress away runners, but not leaves, b. *TOMATOES*, gather, and ripen on heat, b. *VINES*, attend well to, b. *WOOD* ripening: do all you can to secure this, b.

R. ERRINGTON.

FRUIT-FORCING.

AIR, MOISTURE, gradually decrease. *BOTTOM-HEAT* must decline with the light until they reach about 75° in December. *CUCUMBERS*, thin out carefully; stop regularly; and give liquid manure. *CHERRIES*, in tubs or boxes, plunge in a cold and shaded situation. *FIGS*, see that the wood is well-ripened; those in pots plunge and secure from frost. *FIRES*, be moderate with; rather inclose sun-heat. *FLUES*, clean and repair. *GRAPES*, late, fire and ventilate freely; watch for decaying berries. *GLASS*, wash all that is in any way dirty. *MELONS*, sustain a bottom-heat of near 80°; keep down red spider, and ventilate freely in the morning. *NECTARINES* and *PEACHES*: apply liquid manure to late houses after heavy crops; keep away red spider; stop all growing shoots, and secure the ripening of the wood. *PINES*, sustain heat, in order to ventilate most freely those to winter in pits. Apply liquid manure to swelling fruits, and sustain a bottom-heat of 80°; atmospheric from 65° to 85°. *PRUNE* vines, peaches, &c., for very early forcing. *REST*, apply systematically the principles to all things for early work. *WATERING*, decrease at the root in proportion to the decline of the season.

R. ERRINGTON.

ORCHID HOUSE.

AIR: in fine warm weather, a small opening to allow fresh air to enter the house will be useful, both for the keeping down the temperature of the house, and changing the air. *BLETIAS* should be put to rest by withholding water, and placing them in a pit or cooler house. *CYCNOCHES*: this genus of plants should now be kept dry a few days in the warm house, and when perfectly so, remove them into a cooler one. *FIRE* may be applied to heat the hot water every night, more or less, according to the state of the temperature out-of-doors; raise the thermometer by day to 70°, by night let it fall to 60°. *INSECTS*, look diligently after; every one destroyed now, will prevent a host from coming into life in the spring. *LYCASTES*, *MORMODES*, and other similar plants, should go to rest, place them on a shelf where they may be protected from ever receiving any water. *PLANTS* that require to be placed in a place to rest may be known, first, by the full, plump, mature pseudobulbs, and, secondly, by the leaves turning yellow and dropping off. When in such a state, it is absolutely necessary to reduce the water and heat, to prevent them from growing again prematurely. *PLANTS* that are growing should have their due share of water, and be kept moderately warm; some may require potting, and all will be the better for a top-dressing with fresh compost. *STANOPEA* will now be at rest; give no water till the spring. This month is a suitable season for providing materials for growing Orchids, such as fibrous peat, turfy loam, sphagnum or bog moss, branches of trees, and broken crocks; all these, duly prepared, and kept dry and warm, will be ready for use whenever they are wanted during the wet season.

T. APPLEY.

PLANT STOVE.

AIR, give every favourable day. *ACHIMENES*, place in a cooler house, to cause them to give over growing and go to rest; give no water, and put them in a spot where no water or dry heat will reach them; this rule does not apply to *A. picta*, which should now be in flower, and in its greatest beauty. *AMARYLLIS AULICA* will now be showing flowers; remove it, as soon as the flower-buds are visible, from the tan pit into the stove; all other species of stove *amaryllis* should now be at rest. *CONO-*

CLINIUM IANTHEMUM, or, as it is now called, *Hebeclinium ianthemum*, a winter-flowering, elegant stove plant, repot, and grow on to flower in February or March. *ERANTHEMUM PULCHELLUM*, and *E. strictum*, treat similarly. *GESNERAS* should all be at rest, excepting *G. zebrina*, which will now be one of the chiefest ornaments of the stove. *JUSTICIA*, several species will now be in flower; water them freely, occasionally using liquid manure. *JUCULIA GRATISSIMA*, though not essentially a stove plant, will flower much finer early in the season if brought into the stove this month. *MEDINILLAS*, young plants repot; older plants, keep partly dry, and cool. *PASSION FLOWERS*, trim in freely. *POINSETTIAS*, water freely, to produce fine head of bloom in winter. *ROGIERA AMENA*, and *CORDIFLORA*, repot; place in heat, to bloom about Christmas; a new genus of dwarf, free, winter-flowering, stove shrubs. *REMOVE* stove plants kept in frames through the summer into the stove; water freely, to compensate for the loss of the moist atmosphere of the pit. *WATER*, apply very moderately to the general stock. Remove all decaying leaves, and top-dress generally.

T. APPLEY.

FLORISTS' FLOWERS.

ANEMONES, plant early in the month. *AURICULAS* and *POLYANTHUSES*, place in their winter quarters, m.; give no more water than just sufficient to keep them from flagging. *CALCEOLARIAS*, place close to the glass; prick off seedlings. *CHRYSANTHEMUMS*, give abundance of water to and plenty of air; kill insects on by frequent smoking. *CARNATIONS* and *PICOTEEs*, finish potting off into 48-pots, and place under shelter. *CINERARIAS*, keep in frames well protected from frost till next month, excepting early flowerers, which should, as soon as bloom is perceived, be removed into the greenhouse; seedlings pot off. *DAHLIAS*, protect from frost; if already caught by it, cut down, and lift the roots half-way out of the ground, to prevent excessive bleeding; protect plants cut down from frost, by covering with a layer of coal-ashes. *GLADIOLI*, plant b. in light rich soil. *HYACINTHS*, choice, plant b. in a deep rich sandy soil, in a sheltered nook. Common sorts plant anywhere in beds and borders. *IRISES*, English and Spanish, plant b. in rich soil. *PINKS*, plant out finally where they are to bloom. *RANUNCULUSES*, examine and remove all decaying, or mouldy, tubers; prepare beds for; Turban varieties, plant b. *TULIP BEDS*, level, and make ready to receive the bulbs early next month. *WEEDS*, pluck up in every department of the florists' garden.

T. APPLEY.

KITCHEN-GARDEN.

This is the season to look out for plenty of plants of all kinds that are likely to be required for the ensuing spring; and if you run short of any particular kinds, be active in looking round among your neighbours and friends to see what you can exchange with them, as one may have an abundance of Lettuces, another an abundance of Cauliflowers, and so on. This is the way we should help one another. The next thing is to arrange good and proper situations for winter protection. Frames that are done with from the Cucumber or Melon crops, may be removed from the old hotbeds, and set down on the ground, level or upon sloping banks; and if the frame be a deep one, the bottom may be filled with any kind of material to within nine inches of the top of the frame, then upon that six inches of good earth; this brings the crop up within two or three inches of glass. The same may be done with merely four boards nailed together, and so placed upon a sloping bank, filling up in the same way, so as to keep the pricked-out crops up close to the glass. These are contrivances for pricking-out Cauliflowers, or Lettuces, Cabbage-plants of any kind, and make excellent make-shift shelters.

ANGELICA, keep clear of weeds. *ASPARAGUS* beds, dress and plant for forcing. *BALM*, plant. *BEET*, take up for storing. *BORECOLES*, towards the end of the month, may be lifted into quarters of less value, should the ground be likely to be wanted for other purposes for early spring crops. *BROCOLIS*, keep clear of weeds, and attend to those heading in, to protect from frost, &c. *BURNET*, plant. *CABBAGES*, plant out, prick out, and earth-stir among. *CARDOONS*, earth up. *CARROTS*, take up main crops for winter store, and attend to young growing crops, as thinning, keeping clear of weeds and fallen leaves, &c. *CAULIFLOWERS*, plant out under hand-glasses about the middle of the month; also in frames for winter protection. *CELERY*, plant and earth up. *CHIVES*, plant. *COLEWORTS*, plant. *CRESS* (Water), plant. *CUCUMBERS*, plant out; keep up heat of beds, by linings, &c.; water sparingly. *DILL*, plant. *DUNG*, prepare for hotbeds. *EARTHING-UP* and earth-stirring, attend to. *ENDIVE*, attend to planting and blanching. *FENNEL*, plant. *HERBARY*, dress. *HORSE-RADISH*, plant. *HYSSOP*, plant. *JERUSALEM ARTICHOKEs*, keep clear of weeds, and take up as wanted. *LEAVES* fallen, remove frequently. *LEEKs*, earth-stir among. *LETTUCES*, plant and prick out under walls or in frames, &c. *MELONS* (late) keep up heat, by linings, or otherwise; no water must be given. *MUSHROOM-BEDS* make, and attend to those in bearing, &c. *NASTURTIUMs*, gather for seed, if not done before. *ONIONS*, attend to those in store, and earth-stir or thin out the autumn-sown. *PARSLEY*, attend to potting, for use in winter. *PARSNIPS*, take up towards the end of the month for winter storing; leave in the ground for seed. *PEAS*, sow towards the end of the month. *PENNYROYAL*, plant. *POTATOES*, attend to. *RADISHES*, sow. *RHUBARB*, plant in pots for early forcing, end of the month. *SALSAFY*, take up for winter storing. *SAVOYS*, plant out. *SCORZONERA*, take up for winter storing. *SEEDS*, gather of any kinds as they ripen. *SMALL SALADING* sow as wanted. *SPINACH*, keep clear of weeds; thin out, and attend to in dry weather. *TANSY*, *TARRAGON*, and *THYME*, plant, if required. *TOMATOS*, gather; if not quite ripe place them in some warm, dry situation, where they will soon ripen off. *TURNIPS*, clear of weeds, and thin out young crops. *VACANT GROUNDS* rough up, or ridge, or trench. Those who prick out plants in frames, should be regular and mindful to take off the glass lights entirely in all favourable weather, and to tilt back and front in open, wet weather.

T. WEAVER.

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